



# Retrofit First, Not Retrofit Only

Future-proofing national policy to  
support sustainable development

JULY 2024



London Property Alliance



# Acknowledgements

Authored by leading real estate consultancy **Savills**, the report has been developed with insight drawn from **London Property Alliance** members, including those who have submitted case studies or shared their expertise more broadly.

These include **BentallGreenOak** (105 Victoria Street), **Helical** (The Bower) and **Landsec** (Timber Square).

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- ▶ **Andrea Merrington**, Director of Planning and Engagement, The Howard de Walden Estate (Chair)
- ▶ **Kirsty Draper**, Head of Sustainability - UK Agency, JLL (Vice Chair)
- ▶ **John Davies**, Head of Sustainability, Derwent London
- ▶ **Victoria Herring**, Director, Sustainability Programme, Grosvenor
- ▶ **Mark Hopkins**, Associate Director, Head of Project Delivery, The Portman Estate
- ▶ **Dan Jestico**, Director, Sustainable Design, Savills Earth
- ▶ **Harry Knibb**, Director, Development (Europe), Oxford Properties Group
- ▶ **Will Lingard**, Senior Director, Planning & Development, CBRE
- ▶ **Andy Mazzucchelli**, Senior Energy Manager, Landsec
- ▶ **Alexander Morris**, Development Director, BentallGreenOak
- ▶ **Helena Morris**, Project Director, Stanhope
- ▶ **Matt Richards**, Planning Director, Savills
- ▶ **Matt Smith**, Head of Sustainability, Shaftesbury
- ▶ **Jane Wakiwaka**, Formerly Environmental Sustainability Director, The Crown Estate
- ▶ **James Wickham**, Partner, Gerald Eve

# About the London Property Alliance

London Property Alliance brings together the **Westminster Property Association (WPA)** and the **City Property Association (CPA)**. It is a not-for-profit membership body and advocacy group representing the leading owners, investors, professional advisors and developers of real estate operating in the **City of London and Westminster**. The Alliance provides a unified voice for the real estate sector across central London.



# Foreword

The planning system plays a crucial role in society, providing the regulatory framework for future growth which underpins the country's social and economic prosperity. It is local planning authorities who have the final responsibility of applying a whole host of guidance and regulations in their areas. Limiting the built environment's impact on the environment has rightly risen to the top of the political agenda, and the decisions required to ensure our buildings are as sustainable as possible, whilst delivering the homes, workspaces and infrastructure society needs, are finely balanced.

These difficult judgements have come into even sharper focus recently, with high profile cases such as M&S's flagship Marble Arch store on Oxford Street and Mitsubishi/CO-RE's South Bank ITV Studios proposals creating winners and losers in the process – albeit M&S's ongoing appeal against the former Secretary of State's refusal may yet swing the decision back in its favour.

The property industry, particularly the commercial sector which forms the majority of the London Property Alliance's membership, has led the charge in making buildings highly sustainable, embracing innovation to supply the huge demand for best-in-class offices and mixed-use spaces.

It has also readily adopted a retrofit first approach, accepting the logic that it is a whole lot better to try and retain what is already there rather than incur the costs, time and inherent waste in demolishing something that appears to most people to be eminently serviceable. But whilst this might be the ideal, it is also the case that there will be situations where retrofit does not deliver the best solution – which suggests the more sensible policy, as the Alliance's forerunner to this report pointed out, would be for each case to be judged on its

merits. Sometimes a blend of redevelopment and refurbishment is the best way forward; in other cases we may have to accept that a building simply does not merit saving, and indeed a new one in its place will deliver far better outcomes over its lifespan.

This, of course, is where the fun starts, since as the recent high profile cases have sadly shown, both sides are able to call on experts, models and statistics to prove their case – and judging who is right or wrong requires an Einstein level of knowledge and understanding which it is unreasonable to expect a local authority to display and which even a Secretary of State may find challenging. The obvious answer to this is clear and straightforward national guidance which provides greater clarity for planners, politicians and property professionals alike. The National Planning Policy Framework (NPPF) sits at the top of the planning matrix and provides a solid base to build on. It sensibly sets out the three objectives of sustainable development as economic, social and environmental, but it does not currently expand sufficiently on these in a way which helps assess the competing options using standardised metrics which are fair and transparent and accepted by all parties.

The recommendations in this paper provide for some simple changes that would give all parties a framework for assessing the relative merits of retention, partial refurbishment or complete replacement. They encompass all aspects of the carbon challenge whilst also allowing for other environmental, social and economic factors to be taken into account. If they were to be enshrined in national policy then we would have one methodology for assessing the merits of any development proposal. Yes – there would almost certainly be an element of political judgement in the final decision but at least some of the bickering and time-wasting arguments leading up to that point could be largely avoided. And we could get on with producing a built environment that is fit for the future.



**Liz Peace**  
CBE

# Introduction

Our planning system plays an essential role in curating our cities, towns and villages. It underpins and supports the delivery of the homes we live in, our places of work, our parks and public realm and the transport networks we use every day. It is one of the country's most important levers in delivering sustainable growth and supporting our communities.

However, the current system can be complex to navigate and resource intensive, with the benefits of development not always clearly evidenced. This complexity arises, at least in part, from the increasing array of issues that the planning process has to grapple with, when considering larger proposals particularly, as part of the requirement to assess the sustainability of new development. However, it has become apparent from recent case law that national policy requires some updating in these regards to steer all the parties involved in the process on the formulation of policy, on the design of new proposals, and how these should be assessed.

Under national policies set out in the National Planning Policy Framework (NPPF), the planning system has three core objectives for sustainable development: economic, social and environmental. These are interdependent and need to be pursued in mutually supportive ways to create the homes, workplaces, shops, cultural and leisure amenities we all use; in turn contributing to the creation of vibrant places and communities that people want to live and work in, and where they can prosper.

These objectives ensure that alongside the social and economic benefits development can bring, we must achieve environmental sustainability. Buildings are among the largest contributors to carbon

emissions. But we need to look beyond the impact of construction alone, and factor in emissions generated over the lifetime of a building.

Retrofit has a role, alongside partial retrofit, and in some instances full redevelopment, in helping to meet our net zero ambitions. Development also provides social benefit through the provision of training and apprenticeships during construction, from the new homes created, and the jobs created once workplaces are occupied. Economic benefit is also derived from those jobs, alongside the financial contributions unlocked through development which enable investment in supporting infrastructure, the provision of affordable homes, public realm improvements and new community facilities.

Planning applications need to be assessed in a proportionate way which balances all three objectives of sustainable development. Carbon is important, but how it is assessed and weighed against other measures is complex. There is currently no national standardisation of metrics used or guidance on how we evaluate these. This lack of clarity risks an increasingly fragmented approach and uncertainty for communities and investors alike. This can complicate the assessment of proposals, delay planning decisions, and increase the risk of legal challenges, which can in turn hinder the creation of sustainable development.

With the new Government set to consult on a growth-focused approach to planning, it is timely for the London Property Alliance to revisit the need for clearer national guidance in this report, which proposes practical and easily implementable amendments to the NPPF that will help planners, elected members, applicants and communities to better understand and assess the merits of development.



**Rob Bristow**  
Immediate Past  
President, Planning  
Officers' Society

*Rob Bristow is Director of Climate, Planning and Transport at the London Borough of Lambeth and the Immediate Past President of the Planning Officers' Society, which represents c2,000 individual planners working in 80% of the local authorities and public sector organisations in England.*

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PART 1

# Executive summary

# 01

## CHAPTER SUMMARY

- Report rationale, context and overview
- Key findings
- Key recommendations

# Executive summary

Efforts to reduce the impact of buildings on the environment are rightly a priority for the public and private sector alike. Everybody agrees that ensuring our buildings are energy efficient and designed to make the best use of limited resources is essential. But how we achieve that is far from clear.

This paper sets out to explore the urgent need for further clarity and guidance in national policy to help support local decision making, one of the key recommendations from our previous report, 'Retrofit First, Not Retrofit Only'<sup>3</sup>. Our analysis showed that national policy on this issue has failed to keep up with the fast-changing needs of development, amid an increasingly polarised public debate which has left local councils struggling to grapple with balancing competing demands in the planning process, including the need to deliver homes, jobs, workspaces and community infrastructure.



These obligations are enshrined in the NPPF, with local councils required to demonstrate that their plans address three objectives of sustainable development: economic, social and environmental. These are also required to include opportunities for growth.

Whilst there is a strong focus on environmental aspects, these also need to be weighed up alongside the benefits development delivers including generating social and economic prosperity. Likewise, environmental considerations need to factor in more than the carbon used in construction, such as biodiversity and the emissions generated by a building during its lifetime.

There are a multitude of judgements required during the planning process, which are increasingly complex, highly technical and rapidly evolving as technology improves. However, as a starting point it is accepted that owing to the ongoing climate crisis, sustainable and low carbon retention and refurbishment should – all other things being equal – be the highest priority for all existing buildings.

But as this paper's title implies, retrofit first should not mean retrofit only. It is much more complicated than a binary choice between refurbishment being good, and new development bad. Findings from our 2022 report show that adopting a flexible approach, including blending the two depending on the suitability of a building and the sustainable outcomes that can be achieved, is essential. But in some instances, we cannot escape the fact that some buildings are simply too low quality to merit saving, and the cost to decarbonise are simply too great to deliver, or fail to realise the benefits which new development would offer over the building's lifetime.



Extending the retention of poorly performing buildings will make it more challenging to meet national net zero carbon targets, with buildings stuck in limbo, continuing to emit more carbon than they otherwise would following redevelopment or refurbishment. These buildings, whilst also being 'stranded' from a carbon perspective, are also less desirable to occupiers and are therefore more likely to be wholly or partially vacant, with implications for local vitality and placemaking.

With greater policy clarity, including a defined way to appraise proposals across the retrofit-redevelopment continuum, the property sector will be better placed to contribute towards decarbonisation goals, whilst continuing to drive economic growth and play a key role in levelling up.

There is a clear acknowledgment from the property sector that a lack of guidance on how to navigate an increasing focus on carbon is causing significant delays in the planning system and risks stalling

development, including the delivery of more sustainable buildings.

This paper reviews the existing and emerging policy, legislative and regulatory framework which shapes the planning system and its ability to effectively consider retrofit and redevelopment. It also examines the legislative system surrounding carbon in the built environment and how this is incorporated into local planning policy. A review of legislation relating to the historic environment also forms a significant part of this report, due to the complex interplay between carbon emissions reduction and heritage conservation.

The report findings and recommendations are also underpinned by development case studies submitted to the London Property Alliance (LPA) combined with wider input from the LPA membership, industry feedback, and Savills' knowledge of projects and proposals completed or underway across England.

## Key findings

### 1 A crucial gap in national policy

There is no national policy guidance on how to determine if and when demolition and redevelopment provides greater holistic benefits than retrofit. This risks planning decisions taken on the basis of carbon emissions at the expense of other benefits of sustainable development.

The NPPF identifies that to achieve sustainable development, the planning system's three overarching objectives (economic, social and environmental) must work interdependently and need to be pursued in mutually supportive ways. However, there is no guidance on how planners should assess or strike a balance between carbon emissions, other environmental benefits and social and economic impacts when determining if retrofit or redevelopment is most appropriate.

### 3 Planning policy for embodied and whole-life carbon emissions is limited and fragmented, and only exists at a local, and in London, regional level

The current planning system lacks consistent national policy or guidance on how the industry should calculate whole-life carbon emissions (the term used to describe greenhouse gases emitted during a building's lifecycle), or how to apply them to planning decision-making by local authorities.

Whole-life carbon emissions calculations are often unverified and untested, with little opportunity for third-party review and subsequent assurance of delivery.

### 2 Heritage policies currently unaligned to carbon reduction objectives

Within national planning policy, there is no clear guidance on how sustainability considerations should be balanced against any harm caused to the significance of relevant heritage assets as a result of retrofit proposals, creating significant uncertainty in decision-making.

This is exacerbated by a lack of consensus amongst historic environment professionals with regard to best practices when undertaking sustainability upgrades to historic buildings, or whether such upgrades should be undertaken at all. Better guidance, including the identification of heritage compliant interventions would enable owners to maximise the impact of their retrofit interventions and reduce operational carbon emissions.

### 4 Inconsistent decision-making

The retrofit and redevelopment debate has become highly politicised and the real estate industry is seeing this play out as major planning applications make their way through the planning process. LPA members cited examples of where applications had been delayed or at risk of refusal, denting confidence in the planning process.





## Industry feedback - a snapshot

Responsible owners invest in their buildings and communities for the long term, and accordingly require a stable policy and decision-making environment to be able to innovate and plan for the future. This includes the planning needed to undertake the energy efficiency interventions required to meet net zero carbon targets.

With this in mind, approximately 100 LPA members were surveyed about their experience of the policy environment, planning system and decision-making in relation to retrofit and redevelopment proposals. The results revealed an overwhelming consensus among members for the need for nationally applied guidance, along with the below key insights.



**91%**

**agreed** that the provision of nationally applied, standardised guidance on how to assess retrofit and redevelopment design options would be beneficial for the development and planning sectors.



**17%**

**had chosen not to purchase a site** or put forward plans for development because of uncertainty over how it was going to be assessed.



**41%**

**had experienced delays in the pre-planning process** due to a lack of clarity around retrofit and redevelopment.



**71%**

**had used whole-life carbon emissions calculations** during the pre-application process to compare retrofit and redevelopment options. **76%** of these used the results to decide whether to redevelop or retrofit.



Members cited the following **had impacted their own decision making** on development:

- Planning decisions taken without the right national or local policy framework in place or contrary to existing guidance.
- Political pressure in the wake of the former Secretary of State for the Department for Levelling Up, Housing and Communities' (DLUHC) decision in 2023 to refuse the redevelopment of Marks & Spencer's Marble Arch store on Oxford Street.
- Case studies or examples where demolition projects had been delayed or at risk of refusal.



Despite the overwhelming desire for national policy to catch up and provide clarity, the City of London Corporation's **Carbon Options Guidance** was cited as an example of best practice which local authorities should seek to emulate in the meantime.

## Key recommendations

### 1 Introduce a supplementary model for assessment

Introduce a **supplementary retrofit optioneering model for the assessment of retrofit and redevelopment** at a national level. This model for assessment will provide the parameters for appraisals throughout the planning process and facilitate a standardised approach. This seeks to ensure that economic, social and other environmental benefits are being considered in addition to carbon emissions when evaluating the appropriateness of retrofit or redevelopment.

The model will enable planners and politicians to fully understand the nuances, compromises and trade-offs made when taking forward a development. The framework will:

Encourage an improved assessment of the appropriateness of retrofit or redevelopment against the delivery of all three objectives of sustainable development;

Provide a consistent approach to the appraisal of development design options as part of the pre-planning process;

Provide a thorough and transparent assessment of the framework for an agreed, fixed number of development design options during the pre-planning process.

### 2 Make whole-life carbon calculations and assessments a national requirement

Existing national building regulations should be amended to **require and standardise the reporting of whole-life carbon emissions of buildings in line with existing RICS guidance and BRE approved whole life carbon tools**. This should include a nationally-agreed method of calculation of whole-life carbon. A holistic climate policy which specifically relates to whole-life carbon emissions assessment for retrofit and redevelopment options should be included in any forthcoming set of National Development Management Policies.

### 3 Make the sustainable retrofit of our historic environment a public benefit

Provide clarity in existing guidance on how to balance the conservation of the historic environment, and the need to decarbonise listed buildings, non-designated heritage assets, and buildings within conservation areas. This includes **listing justified sustainability upgrades to heritage assets as a public benefit** to be balanced against harm arising from a proposed development.

### 4 Maximise incoming national policy

Include firm guidance on how planning authorities should assess and balance the socio-economic and environmental benefits that a retrofit or redevelopment proposal may provide in the forthcoming National Development Management Policies, which are to be introduced as part of the Levelling Up and Regeneration Act 2023 and will take primacy over local policy.



PART 2

# Planning system and process in brief

## CHAPTER SUMMARY

- Includes an overview of the English policy and plan-making system
- Provides a summary of the planning application process

## Our plan making system

Development or Local Plans that set out the vision and strategic priorities for development in our towns and cities are at the heart of the planning system in England and help to underpin decision-making for proposed schemes. These plans are developed by regional and local planning authorities and consider the needs of an area and the required development such as housing, offices and infrastructure. These plans are developed in line with and need to adhere to the Government's NPPF<sup>8</sup>. While local development

plans provide more detailed requirements and are area specific, the NPPF sets out the broader overarching planning aims and objectives.

Local authorities will also refer to the Government's Planning Practice Guidance (PPG)<sup>9</sup> which supports the NPPF and provides more detailed information on how the planning system should operate, including determining planning applications and the creation of their Local Plans.

The below flow diagram sets out how planning policy is derived from national guidance.

### The English Plan-making system



## National policy and legislation

The Levelling Up and Regeneration Act<sup>10</sup> received Royal Assent in October 2023 and will enable the introduction of a set of National Development Management Policies (NDMPs). These will sit alongside local planning policies in decision-making,

albeit in the event of a conflict, the NDMPs will have primacy. The Act includes an amendment requiring 'regard to the need to mitigate, and adapt to, climate change when preparing new, or amending existing, National Development Management Policies'.



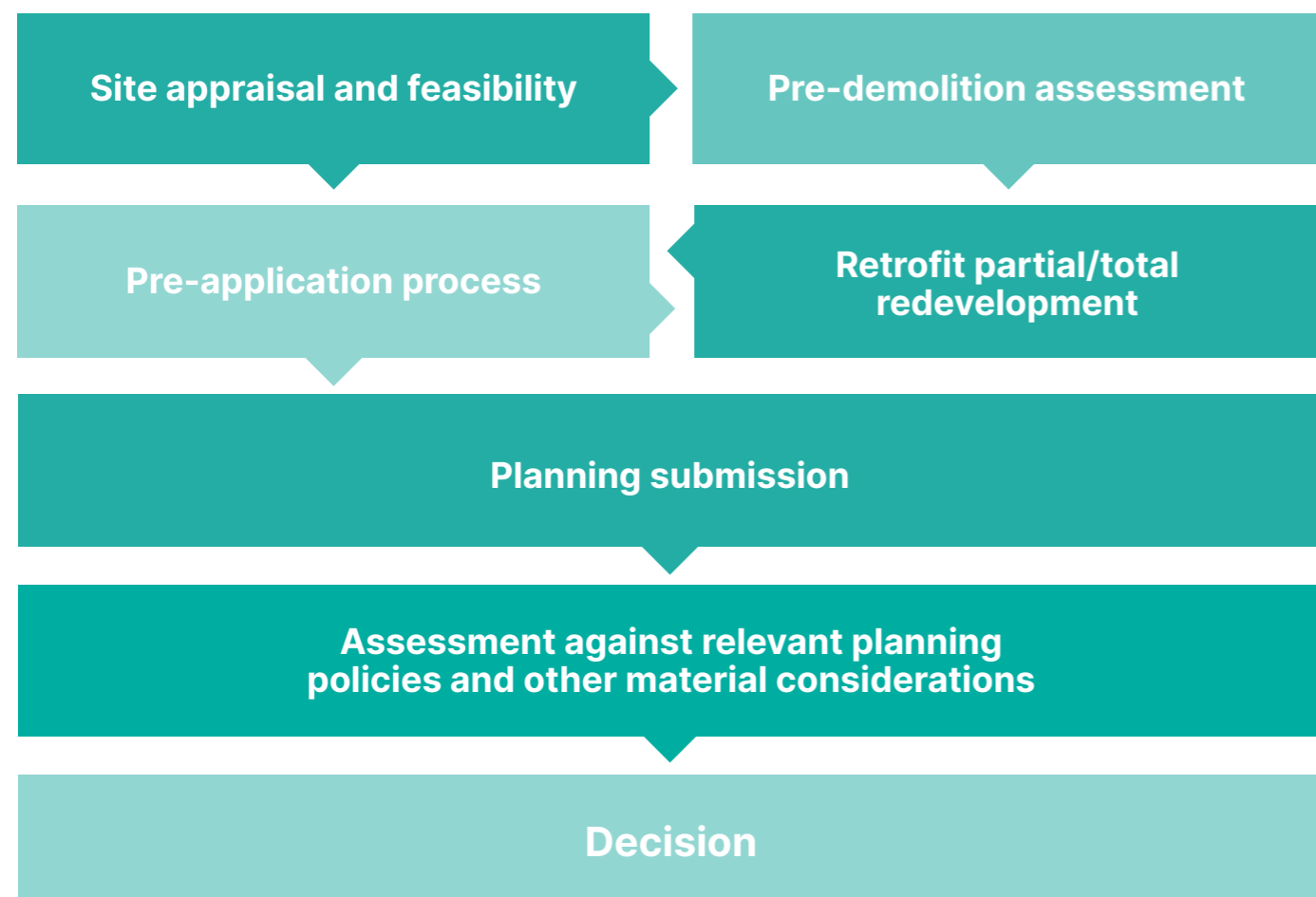
## Planning decision-making

Intrinsic to the initiation of any development project involving an existing building is an analysis of the suitability for retrofit (at whatever level) or redevelopment. Following this analysis, planning applications are required to be submitted to local planning authorities, usually taking the form of a pre-application process and engagement before the final application is submitted.

When a planning application is submitted, the decision must be taken in accordance with legislation, industry regulation and the NPPF, as well as Local Plans, unless there are material considerations<sup>11</sup>

The below flow diagram demonstrates the application process developers undertake.

### The English planning process



PART 3

# A new model for local decision- making

# 03

## CHAPTER SUMMARY

- Builds on a key recommendation of the report
- Provides initial detail of a proposed new retrofit optioneering assessment model

# A new model for local decision-making

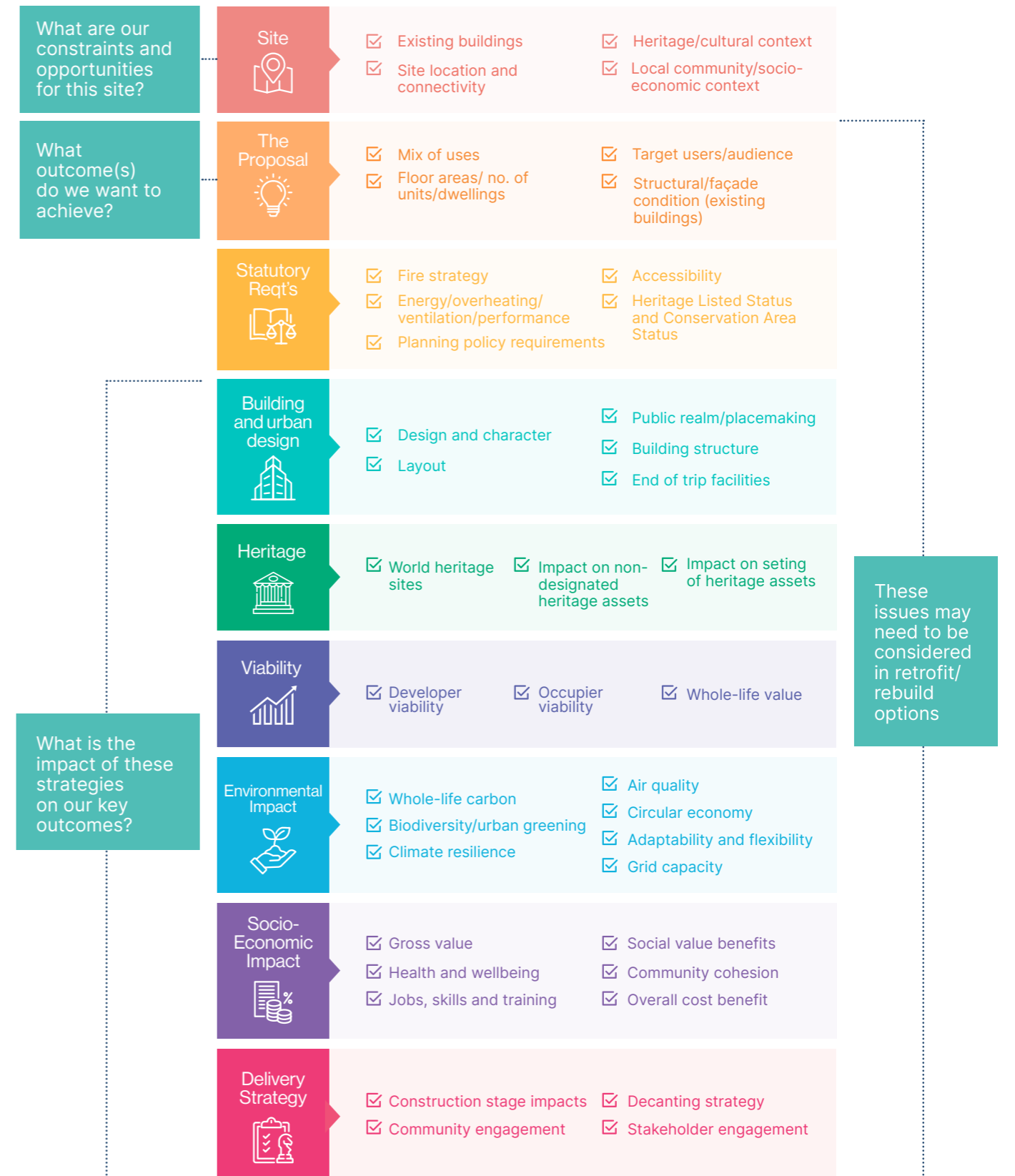
## Retrofit optioneering assessment model

A new retrofit and redevelopment assessment model has been developed by the LPA to address the gap in national planning policy guidance. This will support local planning decision-making, primarily during the pre-application process, as this is when the design team has the greatest ability to consider retrofit and redevelopment design options. However, it is also designed to be used and referenced throughout the planning process.

The model should be robustly, consistently, and transparently considered for all development options during the pre-application process. By following this procedure, a wider range of economic, social, and environmental sustainability considerations are set out to inform the decision-making process, thereby reducing the number and scope of different design options to be assessed by applicants. Although individual schemes vary in their approaches to retrofit or redevelopment, our last report demonstrated that there are often a number of potentially viable design solutions.



## The retrofit optioneering model overview



## The retrofit optioneering process

In order to provide a meaningful analysis, a comparison conducted at the pre-application stage could include a selection of the following:



During the pre-application process, it is not envisaged that a detailed assessment of all environmental, social and economic issues would be required; as this would overly complicate the process with additional information that would follow as part of a planning submission. Nonetheless, it would be expected that a comparable assessment of issues for different development options would be set out to assess the holistic sustainability benefits and impacts of emerging schemes as design options are explored.

At this stage, it is not expected that all issues would carry an equal weighting in assessment, as each site comes with its own constraints and opportunities, and applying weight to different issues would be overly prescriptive and constrain the intent of the framework as being an informative design evaluation tool.

Applicants and local planning authorities should also consider the use of third-party technical reviews to verify that impacts and benefits have been correctly identified and determined. This could consist of an expanded role for Design and Quality Review Panels.



### STEP 1

#### Constraints and opportunities mapping

In keeping with current approaches to pre-application meetings, it would be expected that the applicant would provide information on the current site context, based on planning, design, heritage, environmental and socio-economic inputs.

### STEP 3

#### Check statutory requirements

Design teams and local planning authorities should also be satisfied that all statutory requirements can be met by the proposed design, and that these measures can be delivered without impacting on scheme viability.

### STEP 2

#### Design proposals and target outcomes

A description of each of the design proposals being considered should follow before the benefits and impacts of each of the various issues are addressed.

### STEP 4

#### Scheme-specific considerations

Each proposal will have its own set of scheme-specific issues which must also be considered. Key questions that should be answered for each issue have been detailed overleaf (pages 32 & 33).



## STEP 4

# Retrofit optioneering check list and considerations



### Building and urban design

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- ✓ Does the design of the building meet modern expectations?
- ✓ Can the building be adapted to provide the required internal spaces?
- ✓ How can the public realm and placemaking be improved?
- ✓ Are the end of trip facilities in line with occupier expectations?
- ✓ Has the existing structure come to the end of its safe lifespan?
- ✓ Is the building structurally sound to support additional floor space?



### Heritage

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- ✓ If the site is a heritage asset, what is its significance, what degree of change can it tolerate in terms of impacts on significance for both statutory and non-statutory designations, and what is its optimum viable use?



### Socio-economic impact

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- ✓ How much economic benefit will the scheme provide at a national and local level?
- ✓ Will the scheme improve the health and wellbeing of occupants and neighbours?
- ✓ What commitments can be made to local jobs, skills and training?
- ✓ What other social value benefits will the scheme provide?
- ✓ How will the project contribute to community cohesion?
- ✓ Can the overall socio-economic benefits be quantified and compared for different options?



### Environmental impact

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- ✓ Can the existing building be upgraded to be energy efficient or would a rebuild provide a more energy efficient building, saving carbon emissions over the longer term?
- ✓ Can the existing building provide the same biodiversity and urban greening benefits as a new building?
- ✓ Is the existing building able to tolerate anticipated changes to the climate?
- ✓ What elements of the existing building can be reused or repurposed, either onsite or elsewhere?
- ✓ Can the building be adapted to accommodate a different use and be made flexible to adapt to changing market circumstances?
- ✓ Is the local grid capacity sufficient for the building to adopt an 'all-electric' approach?



### Viability

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- ✓ Will the retrofitted building be able to attract users, tenants and occupiers or will the space remain sub-optimal?
- ✓ How will incorporating all of the relevant economic, social and environmental sustainability objectives impact on viability for both developers and occupiers?



### Building and urban design

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- ✓ What construction stage impacts have been identified and how will they be mitigated?
- ✓ How will communities and other stakeholders be engaged in the project, and how will their feedback contribute to meaningful design optimisation?

*↗ A description of each of the proposed issues, together with relevant assessment guidance, is provided in the appendix.*



## Implementation of the model

### Proposed changes to the NPPF

In order to implement the proposed model at a national level it is recommended that the NPPF includes a positive paragraph that supports exploration of retrofitting buildings first before considering their demolition to support the three objectives of sustainable development. Consideration of the whole-life carbon emissions of a scheme should be factored into the assessment, as well as the social and economic benefits associated with retention and demolition.

It is therefore proposed that paragraph 157 of the NPPF be updated to state the following:

The planning system should support the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change. It should help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions, minimise vulnerability and improve resilience; encourage the reuse of existing resources, including the **feasible** conversion of existing buildings, **accounting for the three objectives of 'sustainable development'**; and support renewable and low carbon energy and associated infrastructure.

### Updating the Planning Practice Guidance (PPG)

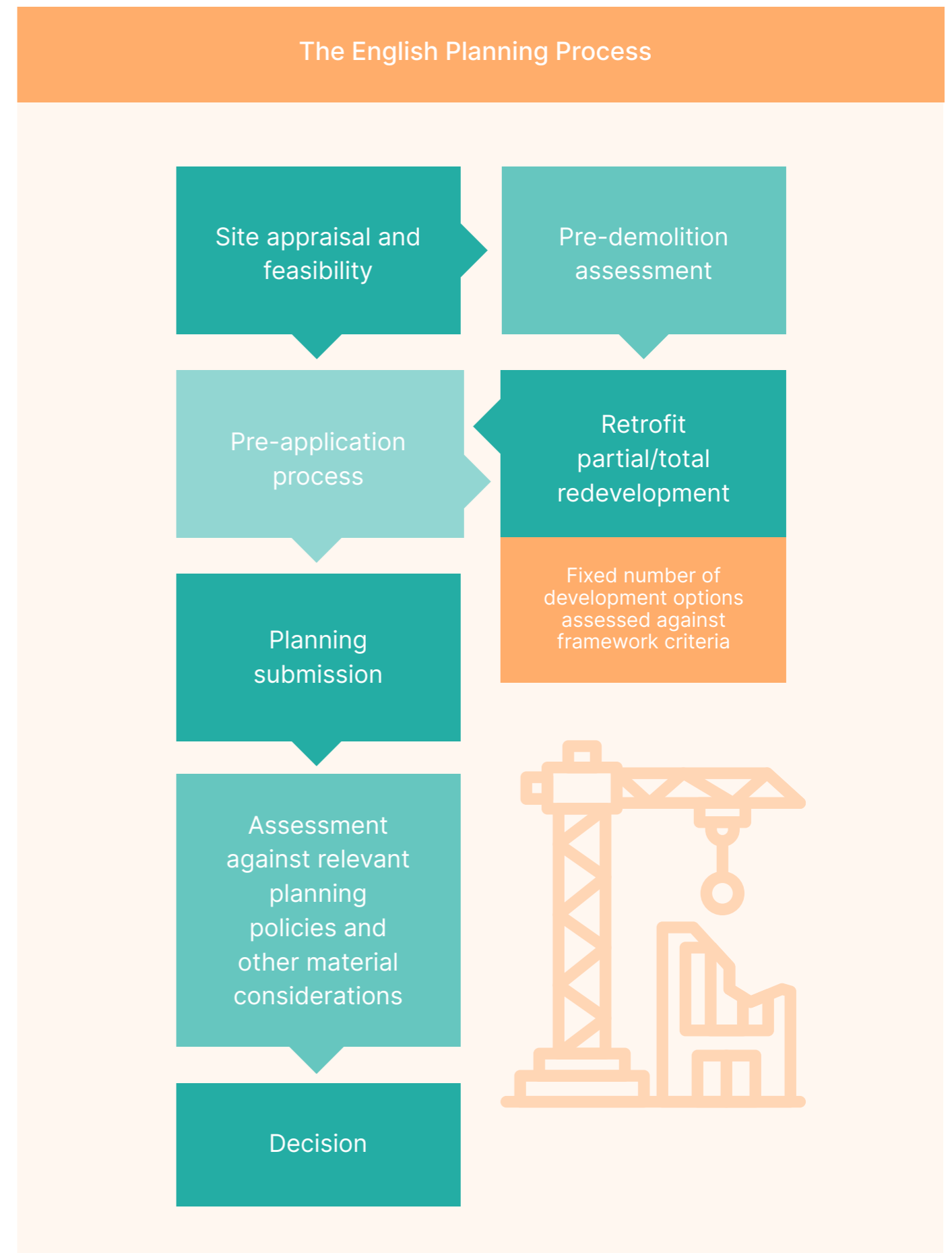
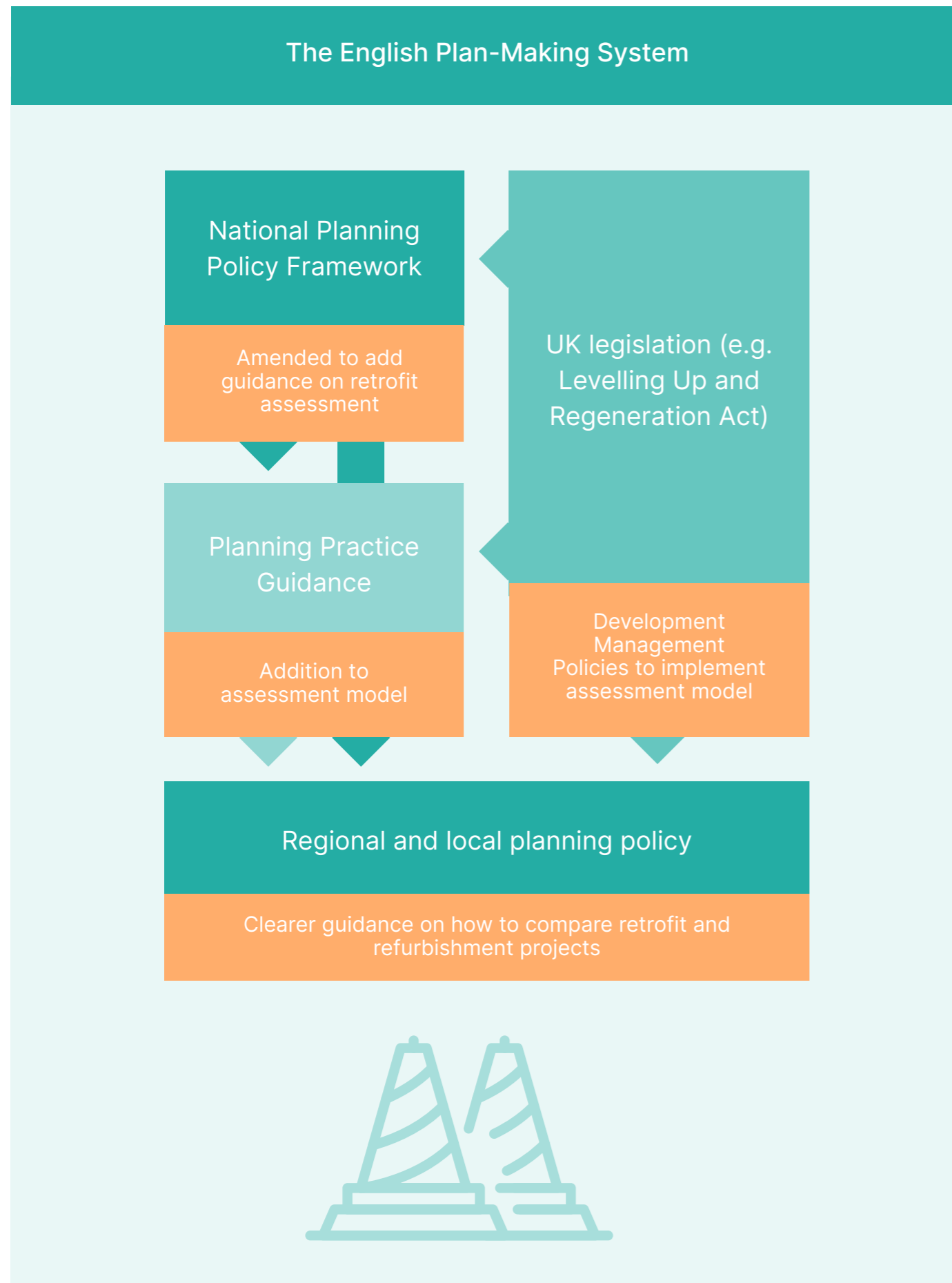
To implement the model effectively, it will need to be added to the PPG as it provides important context to the NPPF and supports the plan-making and decision-taking process. Doing so will provide a standardised, consistent and transparent methodology in order to compare and evaluate the relative benefits and impacts of emerging design options.

Increasingly, applicants are being asked to present a number of design options during the planning process to demonstrate how it made its decision to opt for retrofit or a redevelopment. In order to allow flexibility, we would encourage applicants and local authority planning case officers to discuss and agree this at the outset, rather than setting a fixed number or type of design options.

Regardless, the proposed model should ensure that a range of different refurbishment options are robustly considered, alongside any new build proposals in order to derive minimum environmental impacts, whilst maximising social and economic benefits. The model should also include clear definitions on how minor and major refurbishment, together with partial demolition are defined in a planning context.

The content of policy within the forthcoming National Development Management Policies (NDMPs), and that of the PPG, will need to be kept under review, as aspects of the emerging model may be better addressed within the NDMPs.

If implemented as described above, the plan-making and decision-taking processes described in chapter 2 (page 20), would be revised as follows:



## Policy amendments to address retrofit and heritage assets

Changes to the NPPF to better align heritage and sustainability could cut operational carbon emissions by up to 7.7 MtCO<sub>2</sub> per year, equivalent to 5% of the UK's carbon emissions associated with buildings, based on 2019 levels<sup>12</sup>.

In order to encourage the sustainable retrofit of heritage assets, the NPPF should also be updated in order to explicitly state that well considered and justified sustainability upgrades to heritage assets should be considered a clear and meaningful public benefit to be balanced against any harm arising from proposed development. This could be achieved through a simple addition to Paragraphs 203 and 204, whereby sustainability upgrades could be added alongside optimum viable use as an explicit example of an important public benefit when proposals affect heritage assets.



PART 4

# Planning system analysis & review

## CHAPTER SUMMARY

- Includes an overview of the policy, legislative and regulatory landscape
- Provides a detailed analysis of the planning system in relation to retrofit and redevelopment
- Reviews how the planning system currently takes carbon into account
- Reviews planning and heritage in a sustainability context
- Considers local policy, drawing on examples

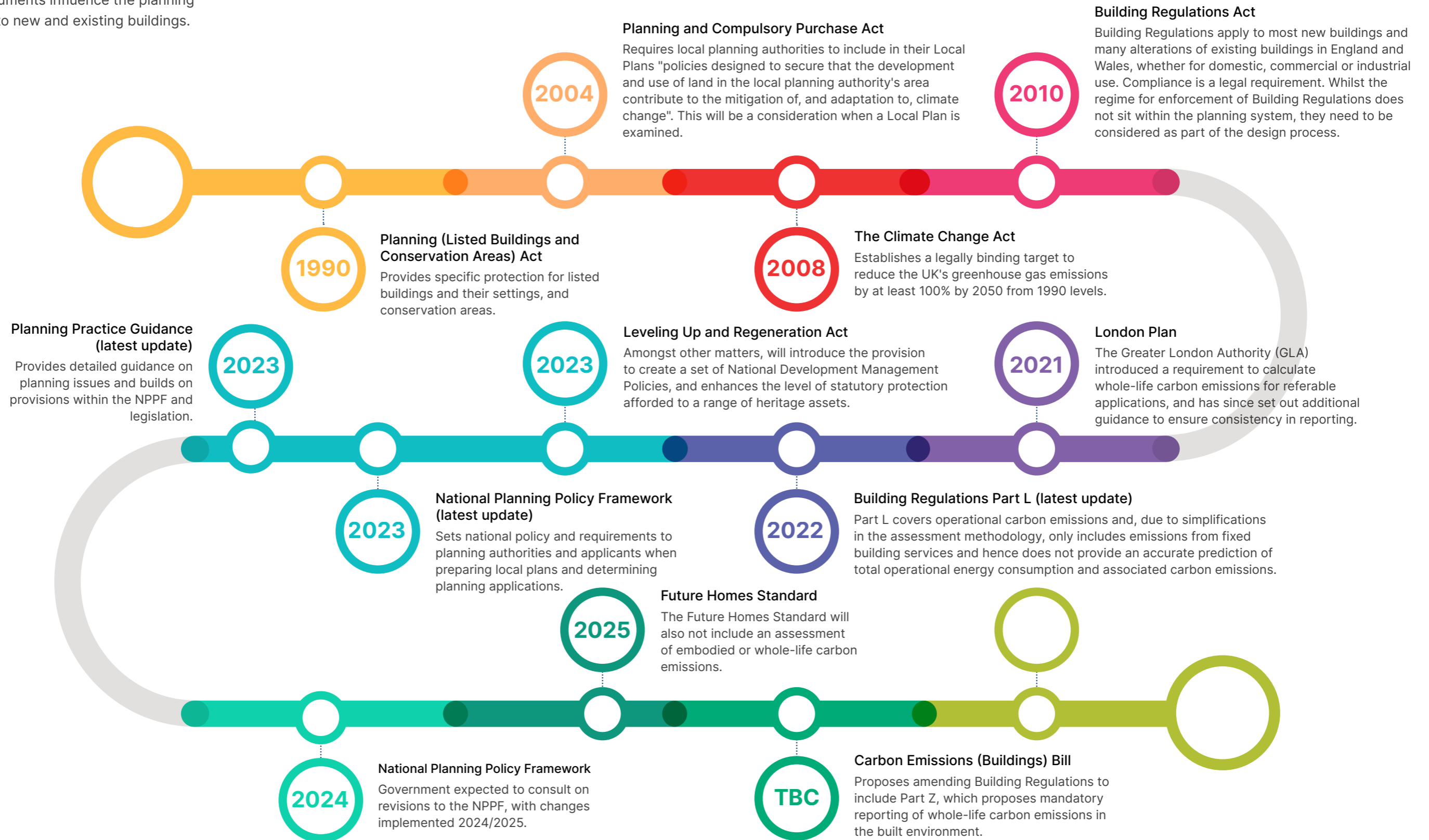
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# Planning system analysis & review

## Planning policy, legislative and regulatory landscape

The following diagram and table overleaf show how other legislative instruments influence the planning process as it relates to new and existing buildings.



## Policy, legislative and regulatory environment overview

Year	Item	Impact	Type	Status
1990	Planning (Listed Buildings and Conservation Areas) Act	The Act provides specific protection for listed buildings and their settings, and conservation areas. Retrofitting listed properties or within conservation areas can be subject to specific constraints and the retrofitting needs to be carried out in a way that balances energy efficiency goals with the preservation of the building's historic character.	Planning Legislation	Existing
2004	Planning and Compulsory Purchase Act	Section 19(1A) of the Planning and Compulsory Purchase Act 2004 requires local planning authorities to include in their Local Plans "policies designed to secure that the development and use of land in the local planning authority's area contribute to the mitigation of, and adaptation to, climate change". This will be a consideration when a Local Plan is examined.	Planning Legislation	Existing
2008	The Climate Change Act (2008)	Establishes a legally binding target to reduce the UK's greenhouse gas emissions by at least 100% by 2050 from 1990 levels.	Climate Change Legislation	Existing
2010	Building Regulations Act (2010)	Building Regulations apply to most new buildings and many alterations of existing buildings in England and Wales, whether for domestic, commercial, or industrial use. Compliance is a legal requirement. Whilst the regime for enforcement of Building Regulations does not sit within the planning system, they need to be considered as part of the design process. This Act paved the way for the regulation of energy performance in buildings via Part L (see below).	Building Regulations Legislation	Existing

Year	Item	Impact	Type	Status
2022	Building Regulations Part L (2022)	Part L covers operational carbon emissions and, due to simplifications in the assessment methodology, only includes emissions from fixed building services and hence does not provide an accurate prediction of total operational energy consumption and associated carbon emissions. Part L covers all newly-built buildings as well as refurbishment to existing buildings.	Building Regulations Legislation	Existing
2023	Levelling Up and Regeneration Act (2023)	Amongst other matters will introduce the provision to create a set of National Development Management Policies, and enhance the level of statutory protection afforded to a range of heritage assets.	Planning Legislation	Existing
2025	Future Homes Standard (2025)	The Future Homes Standard will also not include an assessment of embodied or whole-life carbon emissions.	Building Regulations Legislation	Emerging
TBC	Carbon Emissions (Buildings) Bill (TBC)	Proposes amending Building Regulations to include Part Z, which proposes mandatory reporting of whole-life carbon emissions in the built environment.	Building Regulations Legislation	Proposed
2023	National Planning Policy Framework (NPPF, last updated 2023)	The NPPF sets out the Government's planning policies for England and how these are expected to be applied.	Planning Policy	Existing
2023	Planning Practice Guidance (PPG, 2023)	The PPG is an extensive online resource of detailed policy guidance provided by Ministry of Housing, Communities and Local Government (MHCLG). Along with the NPPF, the PPG sets out how the Government envisages the day to day working of the planning system in England. The PPG includes sections on Climate Change, Design, Historic Environment, Renewable and Low Carbon Energy, Strategic Environmental Assessment and Sustainability Appraisals, among others.	Planning Policy	Existing

# Retrofit and redevelopment policy review

## National planning policy

For England, the NPPF<sup>13</sup> sets out the Government's planning policies for England and how these are expected to be applied – in both plan-making and decision-taking. The NPPF, paragraph 7 defines the purpose of the planning system as 'to contribute to the achievement of sustainable development'. In this context, sustainable development is defined as having three overarching objectives: economic, social, and environmental, with the latter including 'moving to a low carbon economy'.

The NPPF, chapter 14 sets out policies of how planning can support meeting the challenge of climate change. Within this, paragraph 157 states that the 'planning system should support the transition to a low carbon future in a changing climate'. It also asserts that the planning system should 'encourage the reuse of existing resources, including the conversion of existing buildings'. Whilst the NPPF encourages the conversion of existing buildings, it does not cover situations where retrofitting buildings has or has not been considered or where demolition and rebuilding is also an option.

The Government undertook a consultation on changes to the NPPF between December 2022 and March 2023. In Chapter 7; Protecting the environment and tackling climate change, the consultation document in paragraph 13 stated:

*'There have been calls to embed a broad form of carbon assessment in planning policy, for example that could apply at local plan-level or could cover emissions that result from locational, design, travel and development choices. However, evidence on their operation and impact, and how local authorities take action on the results, is not clear cut. We are interested in whether effective and proportionate ways of deploying a broad carbon assessment exist, including what they should measure, what evidence could underpin them such as Local Area Energy Plans, and how they may be used in a plan-making context or as a tool for assessing individual developments. This will inform a further consultation on national planning policy in due course. Alongside this, the Government intends to consult in 2023 on Quantifiable Carbon Reductions guidance as part of the statutory Local Transport Plans process.'*

Following publication in December 2023, the updated NPPF remains unchanged so far as these matters are concerned, and it is uncertain as to when consultation on Quantifiable Carbon Reductions will take place following the change of Government in July 2024.

## The Levelling Up and Regeneration Act & its policy impact

The Levelling Up and Regeneration Act received Royal Assent in October 2023. This legislation will enable the introduction of a set of National Development Management Policies (NDMPs) which will cover a range of planning issues and have statutory weight. Although they will sit alongside local planning policies in decision-making, they override the content of existing local plans when the two conflict<sup>14</sup>.

The Act includes an amendment requiring 'regard to the need to mitigate, and adapt to, climate change when preparing new, or amending existing, national development management policies'.

## What is sustainable development?



**An economic objective** to help build a strong, responsive, and competitive economy, supporting growth, innovation and improved productivity, and by identifying and coordinating the provision of infrastructure.



**A social objective** to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being.



**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.





## Planning Practice Guidance (PPG)

The Planning Practice Guidance adds context to the NPPF, and it is intended that the NPPF is read together with the PPG. Local planning authorities who prepare planning policies must have regard to national policies and advice contained in the guidance. The PPG is a material consideration when authorities determine applications.

The PPG contains a section on climate change, which provides guidance on reducing operational

carbon emissions but does not cover embodied or whole-life carbon emissions. As such, the PPG doesn't provide a clear path to reducing whole-life carbon emissions from the built environment.

Additionally, the PPG does not currently provide guidance on retention, retrofitting, or demolition and the replacement of buildings.

## Local planning policy

The Planning and Compulsory Purchase Act 2004 requires Local Plans to include 'policies designed to secure that the development and use of land in [an] ... area contributes to the mitigation of, and adaptation to, climate change'. This will be a consideration when a Local Plan is examined.

Each planning authority sets its own planning policies relevant to local needs and opportunities. Across England, local planning policy is of varying ages, depending on when the most recent review of the Local Plan has taken place, and consequently has varying commitments to decarbonisation<sup>15</sup>. Many local planning authorities have made climate emergency declarations and have been preparing climate action plans to meet net-zero targets. Many have policies in place to minimise operational carbon emissions, with an increasing number targeting significant carbon emissions reductions for new build properties. These emission reduction targets are usually based on the latest iteration of Building Regulations Part L.

However, Part L was updated in 2022, partially to reflect the decarbonisation of the electricity grid, and as a result, the carbon reduction targets contained within development management policies are often out of date.

Some local planning authorities, though to a lesser extent, also require the calculation of whole-life carbon emissions to be submitted as part of the package of application documentation. However, the vast majority do not have specific policies on how whole-life carbon emissions and broader sustainability issues should be assessed when considering the retrofit or redevelopment of existing buildings, and how these policies feed into the national net zero carbon goal<sup>16</sup>. This means that developers are required to adopt different approaches to both decarbonisation and retrofit for projects in different locations, depending on the local policy context, officer feedback, and attitudes expressed in consultation responses.





## Local policy in action

### City of London Corporation

The City of London's Climate Action Strategy includes a commitment to support the achievement of net zero for the Square Mile by 2040. Part of the Strategy<sup>17</sup> states that the City of London will use its planning role to influence others to embed carbon analysis and circular economy principles in capital projects.

The City of London Corporation has committed to working towards net zero carbon for both embodied and operational carbon emissions and in March 2023, it published a Carbon Options Guidance Planning Advice Note (PAN)<sup>18</sup> which provides a first step of carbon evaluation and is designed to enable a consistent early-stage approach to assessing options. The document sets out a recommended approach to optioneering and provides a reporting dashboard which is expected to be completed as part of the pre-application process.

The guidance contained within the PAN has been utilised as part of the recently approved 55 Bishopsgate application, which compared the whole-life carbon emissions for four different development scenarios, including both refurbishment and redevelopment. Despite the analysis showing that the whole-life carbon emissions would be highest for the approved building, a range of other environmental, social, and economic issues were set out to compare the different development scenarios.

In order to provide more holistic guidance on wider sustainable development issues, the City of London is also planning to adopt a new Supplementary Planning Document.

In April-June 2024, the City of London Corporation consulted on changes to its City Plan 2040, which will provide a framework for future development in the Square Mile, outlining its priorities until 2040 and beyond. The Draft Plan's end date has been changed to 2040 to align with the commitment in the City Corporation's Climate Action Strategy to support the achievement of net zero.



## City of Westminster

In its City Plan<sup>19</sup>, the City of Westminster confirmed a commitment to reducing carbon emissions and achieving zero carbon. Its City Plan policy on energy promotes zero-carbon development and expects all development to reduce on-site energy demand and maximise the use of low-carbon energy sources. The City Plan policy on carbon reduction sets out that all development proposals should follow the principles of the Mayor of London's energy hierarchy. Major development should be net zero carbon and demonstrate through an energy strategy how this target can be achieved.

Whilst there is currently no adopted policy in place that addresses how carbon should be considered alongside other aspects of sustainable development, in practice

Westminster requires pre-demolition audits to be undertaken when a redevelopment project is proposed. These consider the implications of the embodied carbon release and assess whether a particular building/buildings are in a condition that renders them suitable for redevelopment or whether they should be retained. This adds a layer of analysis over matters such as heritage when considering the suitability of redevelopment.

The City of Westminster is currently undertaking a Partial Review of its City Plan 2019-2040, which includes an intent to prioritise retrofit and refurbishment of existing buildings where appropriate, rather than demolition. This will include new policy guidance to compare long-term whole-life carbon emissions.



## Greater Manchester

Greater Manchester's vision is to become a carbon-neutral city region by 2038. As a part of delivering this target, the city region is aiming to significantly upscale building retrofit.

*Places for Everyone*<sup>20</sup> is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford, and Wigan) for jobs, new homes, and sustainable growth.

Although the joint development plan document is yet to be adopted, it contains policy guidance around the issue of sustainable development, stating that development should aim to maximise economic, social and environmental benefits simultaneously, minimise adverse impacts, utilise sustainable construction techniques, and

actively seek opportunities to secure net gains across each of the sustainable development objectives. It is also stated within the same policy that a preference will be given to using previously developed land and existing buildings to meet development needs.

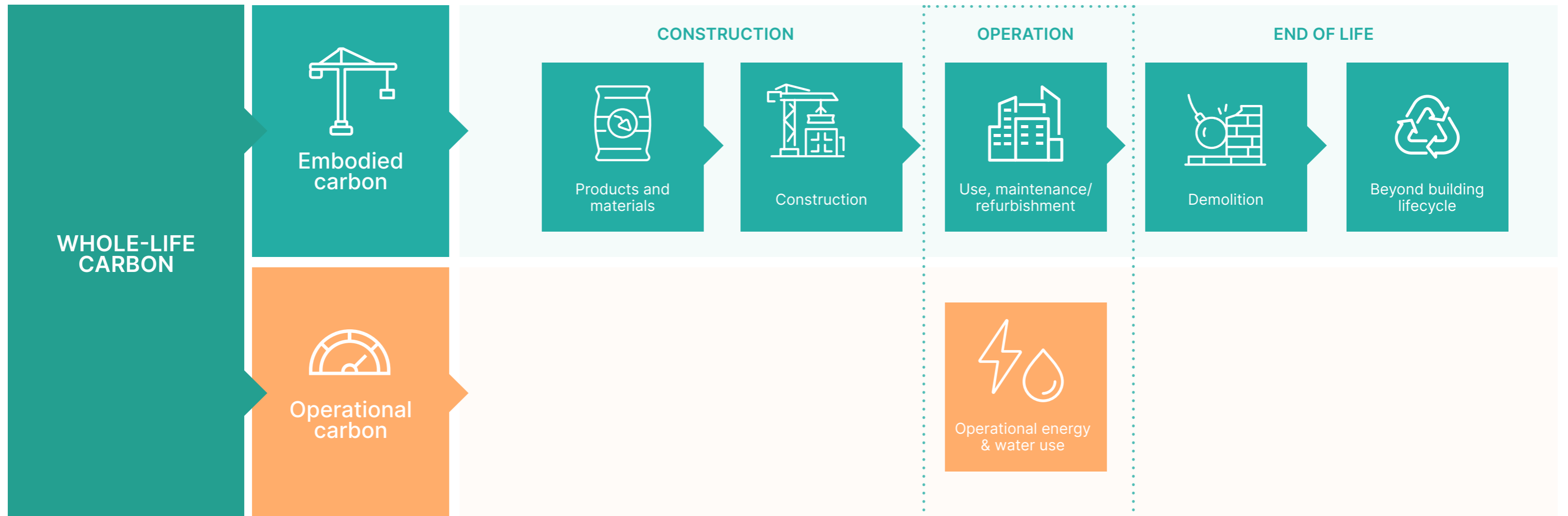
The use of whole-life carbon assessment tools to calculate life cycle emissions is also encouraged. However, there is no link between the use of such tools, or other factors, in determining when retrofit would be deemed more suitable than redevelopment.



# Whole-life carbon assessments and Building Regulations

Buildings generate carbon emissions throughout their entire lifetime. These are generally split into two categories: operational carbon emissions and embodied carbon emissions. When combined and assessed over the lifetime of a building, the collective emissions are referred to as whole-life carbon emissions. It is estimated that buildings

are responsible for around 40% of the UK's carbon emissions (being made up of approximately 18% operational emissions, 6% from embodied emissions and 16% from surface transport)<sup>21</sup>, and therefore tackling whole-life carbon emissions from buildings has to form a key element of the national net zero strategy.



The only mandated carbon compliance regime is set by Building Regulations Part L (Conservation of Fuel and Power)<sup>22</sup>.

Due to the absence of national legislation regarding embodied carbon, the construction industry has proposed the introduction of Building Regulations Part Z (Whole-Life Carbon). At the time of writing,

Part Z remains an industry-supported proposal, which is also endorsed by the findings of this report.

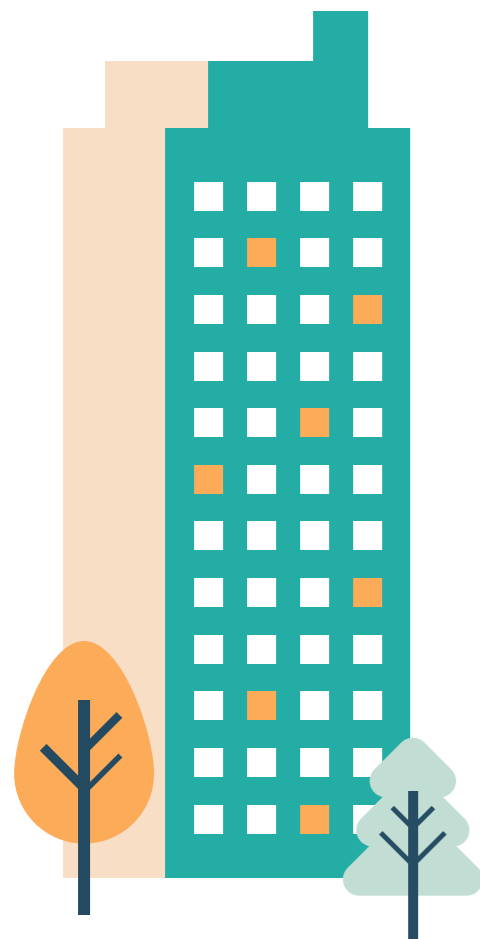
In 2022 Jerome Mayhew MP presented the Carbon Emissions (Buildings) Bill<sup>23</sup> to Parliament, which would amend Building Regulations to calculate and report on whole-life carbon emissions, in line with the recommendations set out in the Part Z proposal.

However, at the Bill's second reading in November 2022, the Government declined to support it, resulting in a national embodied carbon policy vacuum.

Current proposed legislation relating to embodied and whole-life carbon does not include the setting of specific emissions targets for new or existing

buildings, although this has been recommended in future iterations of policy once sufficient quantities of data have been accumulated on how current projects are performing.

## Carbon and policy



	NATIONAL POLICY	REGIONAL POLICY	LOCAL POLICY
Operational carbon	<ul style="list-style-type: none"> <li>NPPF requires reductions in GHG emissions.</li> <li>Building Regulations Part L sets out methodology for calculating operational carbon emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Greater London Authority sets limits for operational emissions based on Part L methodology.</li> </ul>	<ul style="list-style-type: none"> <li>Individual local authorities set different limits for operational emissions, usually based on Part L methodology.</li> </ul>
Embodied carbon	<ul style="list-style-type: none"> <li>NPPF encourages reuse of existing resources.</li> <li>No guidance or legislation on regulating embodied carbon emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Greater London Authority sets limits for embodied emissions based on RICS methodology.</li> </ul>	<ul style="list-style-type: none"> <li>Individual local authorities are increasingly asking for embodied emissions calculations, but inputs and calculation methods are inconsistent.</li> </ul>

## The London Plan

The Greater London Authority (GLA) introduced a requirement to calculate whole-life carbon emissions for referable applications in the adopted London Plan 2021<sup>24</sup>, with the policy first consulted on in 2017. The GLA has since set out additional guidance to ensure consistency in reporting<sup>25</sup>. Whilst the GLA's guidance naturally has a London focus, planning authorities outside London have since adopted similar strategies and make use of the GLA's guidance and reporting templates for whole-life carbon emissions. Similarly, planning authorities within London also refer to the GLA's guidance for non-referable applications. As such, the GLA's reporting framework, which makes use of the BS EN 15978 and RICS framework (covered in more detail on p59), provides guidance and reporting requirements for applicants at both the pre-application, application, and post-completion stages of projects.

Whilst the policies in the London Plan are not specific to retrofitting, refurbishment or demolition, the whole-life carbon assessment requires consideration of the amount of carbon a scheme would emit over its entire life, from demolition and construction through to the use of the building once completed and what would happen at the end of the building's lifespan. This does allow planning authorities to consider the amount of carbon a scheme would emit if it were proposed to demolish an existing building and replace it with a new structure and compare this with alternatives that would either entirely or partially reuse the existing building. This approach encourages the reuse of building structures, foundations, or other elements in order to reduce whole-life carbon emissions.



## National industry guidance on whole-life carbon

Beyond national legislation, there exists a raft of industry standards and guidance to assess embodied and whole-life carbon. BS EN 15978 (Sustainability of Construction Works)<sup>26</sup> sets out the various modules to be included in whole-life carbon assessments.

The RICS Professional Statement 'Whole Life Carbon Assessment for the Built Environment'<sup>27</sup> sets out specific mandatory principles and supporting guidance for the interpretation and implementation of the BS EN 15978 methodology, and is the most widely used methodology guiding developers and consultant teams in assessing whole-life carbon. The RICS methodology has been adopted by a number of industry standards including LETI<sup>28</sup>, RIBA<sup>29</sup> and the UKGBC<sup>30</sup>. However, it is worth noting here that within the various industry guidance standards, there are variations in the building elements and life cycle modules to be included in assessment, meaning that results may not be comparable between methodologies.

In order to address these discrepancies, the construction industry has come together to develop the UK Net Zero Carbon Buildings Standard (NZCBS)<sup>31</sup>, with the support of a wide range of industry bodies, including CIBSE, IStructE, LETI, RIBA, RICS and UKGBC. It is expected that the work of the NZCBS will result in a standardised methodology and associated targets for assessing

whole-life carbon for both new and existing buildings during various stages of the development process. Work on the standard is ongoing and is expected to be published in 2024.

Additional guidance on how whole-life carbon can be assessed and reduced for both retrofit and redevelopment projects is more thoroughly explored in the LPA's 2022 report, 'Retrofit First, Not Retrofit Only: A focus on the retrofit and redevelopment of 20th century buildings'<sup>32</sup>.



# Considering the historic environment

The historic environment comprises numerous different types of heritage assets<sup>33</sup> and various designations and policies exist to protect these buildings. The heritage assets most likely to be relevant to discussions on retrofit are listed buildings and those located in conservation areas, which are termed 'designated heritage assets' due to the statutory protection they are afforded.

## National policy

Locally listed buildings and other buildings which are identified as having significance through the planning process, but which are not protected by legislation are known as 'non-designated heritage assets'. Other asset types which may more rarely be impacted are World Heritage Sites (also a designated heritage asset). Retrofitting existing buildings whose heritage status is a material consideration in the planning process is more complex than for other types of buildings because often they cannot tolerate the same degree of refurbishment without harmful impacts on significance.

Currently, different heritage assets are subject to differing levels of protection in the UK, although this is to be amended under the Levelling Up and Regeneration Act 2023. Of those most likely to be impacted by retrofit schemes, listed buildings and conservation areas are protected by legislation, while the remainder protected by policy considerations only. However, even this is not clear cut, with the setting of listed buildings given statutory protection under the Planning (Listed Buildings and Conservation Areas) Act 1990. The setting of conservation areas is not specifically protected by law, despite being protected by the

same Act. This makes setting out the requirements to be considered when assessing the potential for retrofit a complex process.

With regard to the potential for retrofit, the key heritage consideration is what impact retrofit will have upon the significance<sup>34</sup> and/or setting of designated and non-designated heritage assets. Applications affecting heritage assets are subject to the requirements of the NPPF, which sets out that they are an irreplaceable resource and should be conserved in a manner appropriate to their significance<sup>35</sup>.

The NPPF also sets out the considerations that should be taken into account when assessing the impact of proposals on the significance of relevant heritage assets, and whether this impact is acceptable. This includes a provision for substantial harm to be outweighed through securing the long-term viable use of the heritage asset in exceptional circumstances, and states that: *'where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.'*<sup>36</sup>

## Sustainability vs heritage

There is currently no clear reference to how sustainability considerations should be balanced against any harm caused to the significance of relevant heritage assets as a result of retrofit proposals, in either the NPPF or any other statutory policy and guidance. This is exacerbated by a lack of consensus amongst historic environment professionals with regard to best practices when undertaking sustainability upgrades to historic buildings, or whether such upgrades should be undertaken at all.

Within the wider climate change and net zero context, securing and communicating opportunities to improve the energy efficiency of heritage assets and the historic environment through low carbon refurbishment is both critical to their long-term survival and to achieving the UK's net zero obligations. In respect of the historic environment, the current NPPF is weighted in favour of conservation over mitigation for climate change. For the 2% of buildings which are statutory listed in England, many would argue this is appropriate, but with an estimated 10% of England's building stock falling within conservation areas, at some point in the future, the industry will have to decisively address how we balance a reduction carbon emissions against the desire to conserve the historic environment.





## Building Regulations

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Existing buildings are not generally required to be brought up to the standards required by Building Regulations for new buildings. However, existing buildings, or parts of existing buildings may need to comply with certain aspects of Building Regulations in certain circumstances. Furthermore, listed buildings and buildings within conservation areas are not exempt from complying with Building Regulations, although some of the Building Regulations approved documents explicitly recognise that special considerations are needed for listed buildings, buildings within conservation areas, buildings whose architectural or historic interest is referred to as a material consideration with a local development plan, buildings within World Heritage Sites and vernacular buildings of traditional form and construction. Historic England provides guidance on the interaction between heritage assets and Building Regulations<sup>37</sup>. Despite this, confusion remains and this is often compounded by the subjectivity of the decisions involved.

## Industry guidance

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The industry has provided guidance on how the retrofit of historic buildings should be approached. BS 7913: 2013 (Guide to the conservation of historic buildings)<sup>38</sup> describes best practice in the management and treatment of historic buildings, and applies to historic buildings with and without statutory protection. Similarly, BS EN 16883 2017 (Conservation of cultural heritage - guidelines

for improving the energy performance of historic buildings)<sup>39</sup> comprises guidance for improving the energy performance of historic buildings in a sustainable manner. This guidance proves that the considered and careful refurbishment of historic buildings is possible and can therefore be used to reduce carbon emissions from heritage assets.

## National guidance

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Further guidance on decision making in the historic environment is set out in the relevant paragraphs of the PPG (last updated 2019) as well as a suite of guidance produced by Historic England in the form of Good Practice Advice notes (GPAs) and Historic England Advice Notes (HEANs)<sup>40</sup>. GPAs provide supporting information on good practice, particularly looking at the principles of how national policy and guidance can be applied, while HEANs include detailed, practical advice on how to implement national planning policy and guidance.

Whilst technical advice on select sustainability measures and retrofit approaches have been published by Historic England, such as 'Energy Efficiency and Historic Buildings: How to Improve Energy Efficiency (2018)<sup>41</sup>', overarching GPA level guidance with regard to balancing sustainability and retrofit measures against the principles and requirements of national policy and legislative requirements is currently lacking.



## Local planning policy

Local planning policy with regard to heritage is primarily derived from the NPPF, and as such there is also an absence of clear direction concerning the suitable balance between harm to heritage assets and sustainability upgrades at the local decision-making level. As more LPAs declare climate emergencies however, this is a position which is becoming untenable. Where local planning authorities have recently updated their Local Plans to reflect this emergency and incorporate sustainability considerations, a more holistic approach to the potential for retrofit to listed buildings is apparent.

## Barriers to the retrofit of historic buildings

There are many accepted methods when it comes to retrofitting heritage assets and exemplary heritage retrofit projects do exist, however, where decision-makers lack the knowledge, skill or backing to accept low levels of harm to secure the benefits associated with retrofit, heritage is often invoked as a way to resist change. On the other hand, the industry's understanding of how most buildings with some form of heritage status perform is lacking, and many of the methodologies used to assess their performance and evaluate different retrofit options are not adequate. This leads to decision-makers being forced into resisting retrofit measures on the basis that they would not only harm the significance of the asset, but would also be ineffective at best, or reduce energy performance at worst.

Clearly national planning policy needs to address how to balance the public benefits of sustainability measures against significance so that this can be introduced into local plans and planning officers have recourse to permit upgrades that are suitable to the particular heritage asset. However, this needs to be accompanied by initiatives and funding to upskill decision-makers in the technical assessment of retrofit schemes and to upskill the industry in specifying and responsibly implementing sympathetic retrofit schemes. Without this, future carbon emissions are effectively being locked into the historic environment. The development of detailed guidance is beyond the scope of this report but is a key recommendation arising from it.



## London Borough of Camden

The London Borough of Camden's Local Plan<sup>42</sup> (adopted in 2017), makes reference to the need to balance heritage considerations with other public benefits in the context of sustainable design and retrofitting. The supporting text for development management policy D2 – Heritage, states the following:

*Historic buildings including those in conservation areas can be sensitively adapted to meet the needs of climate change and energy saving while preserving their special interest and ensuring their long-term survival. In assessing applications for retrofitting sustainability measures to historic buildings the Council will take into consideration the public benefits gained from the improved energy efficiency of these buildings, including reduction of fuel poverty. These considerations will be weighed up against the degree to which proposals will change the appearance of the building, taking into consideration the scale of harm to appearance and the significance of the building.*

This represents a proactive approach to the consideration of retrofit measures as a public benefit when balancing heritage impacts.



PART 5

# Industry feedback and case studies

# 05

## CHAPTER SUMMARY

- Provides an overview of industry experience of retrofit and redevelopment in planning and development
- Includes a review of real-life examples of leading retrofit and redevelopment schemes and the reasons behind the eventual approach

# The experience on the ground

Between October 2023 and March 2024, the LPA obtained feedback from planning, sustainability and development practitioners on their project experiences of how the complex issues around retrofit and redevelopment are considered during the pre-application process. Feedback was obtained from approximately 100 individuals working in the real estate sector and include:



## The need for clarity

**41%** of respondents had experienced delays in the pre-planning process due to a lack of clarity around retrofit and redevelopment, while **17%** of respondents said they had chosen not to purchase a site or put forward plans because of uncertainty over how it was going to be assessed.

Nearly all, **91%** agreed that the provision of nationally applied, standardised guidance on how to assess retrofit and redevelopment design options would be beneficial for the development and planning sectors. However, this would also need to account for regional variability in development costs to be useful.



## Quality of the guidance

It was reported that guidance is often vague and based on planning case officer feedback, rather than national guidance. It was reported that this guidance is derived from regional and local planning policy, with input from stakeholder organisations, including Historic England who provide their own Advice Notes. Respondents also stated that in the absence of detailed guidance on how to compare design options, design teams had to provide evidence to local authorities to demonstrate the benefits of the proposed design.

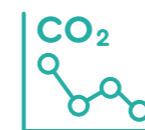


## Design optioneering

**93%** had worked on projects that have considered design options around retrofit and redevelopment.

Of those, **54%** were aware of relevant planning guidance on how to assess the various benefits and impacts of different design options for retrofit and redevelopment, although this was almost exclusively provided by local planning authorities (including the City of London's Carbon Options Guidance note), rather than at a national level.

When asked about the number of design options that were considered as part of the pre-application process, most stated that between two and five design alternatives were considered. However, some stated that they had considered up to ten different design options.



## Whole-life carbon emissions calculations

More than 70% had used whole-life carbon emissions calculations during the pre-application process to compare retrofit and redevelopment options.

Of these, **76%** stated that the results from this analysis were used to inform the decision-making process on whether to redevelop or retrofit.



## Other factors shaping industry decision-making

Other issues that formed part of this decision-making process in the industry included heritage constraints, delivery of affordable homes, building structural condition, wider social and economic benefits, internal layout and design, predicted lifespan of the existing building, amenity space, and construction timeframes.

However, issues around cost and viability were most prevalent in the decision-making process, as were reputational risks and political considerations in the wake of the decision by the former Secretary of State for Levelling Up, Housing and Communities to refuse the redevelopment of the Marks & Spencer's Marble Arch store on Oxford Street.

## Timber Square, 25 Lavington Street, Southwark, London



Project	Timber Square, 25 Lavington Street
Client	Landsec
Planning authority	London Borough of Southwark
Current use	Offices, plus retail
Planned use	Offices, plus retail
Size	34,374 m <sup>2</sup> (370,000 sq ft)
Project type (retrofit/redevelopment)	Part redevelopment, part retain and extend
Date of approval	2020

### CONTEXT

- » Timber Square is a landmark development in the heart of London's South Bank, located on the site of the former timber storage yard and print works. It will deliver two main buildings – The Ink Building and The Print Building – with a design approach that prioritises customer health and wellbeing and an accommodation offer tailored to a diverse mix of office and retail tenants, with 10% of the new space ringfenced as affordable space for SMEs.
- » The scheme was originally constructed as a printworks in 1959, and extended and adapted in the 1980s for use as commercial offices by TSB Bank. The site consisted of two linked buildings referred to as the 'East Building' (c. 100,000 sq ft) and 'West Building' (c. 35,000 sq ft). The East Building was six storeys at its highest point but not evenly stacked. The building included tall ground and basement spaces, with a steel encased concrete structural frame in good condition; generous slab to slab heights on other floors between 3.9 and 4.5 metres. The West Building comprised three floors of office space

and one level of basement, with a large unused car park to the front of it included within the site boundary.

- » Minimise the building's weight and an exposed concrete finish was chosen to match the existing frame.

### LIMITATIONS OF THE EXISTING BUILDING

- » The East Building was partially retained and refurbished with 85% of structure retained, due to its robust construction and favourable layout.
- » The demolition of the West Building to make way for a new 15-storey asset was due to the building's inefficient floor plate and the presence of the car park.

### REASONS FOR REDEVELOPMENT/REFURBISHMENT

- » The Print Building (East Building) had a long term viable future due to its inherent structural

capacity, the volume of the lower floors and the size of floorplates. The West Building, on the other hand, had compromised floor plates and a large car park to the front of the site. The retention of this building would have impeded the redevelopment of the site and the improved public realm.

### FACTORS INFLUENCING THE DECISION TO RETAIN/DEMOLISH BUILDING

- » Existing structure, public realm, whole-life carbon emissions, design and layout of existing building, viability of office use in prime location.

### PROPOSED BENEFITS OF SELECTED REDEVELOPMENT/REFURBISHMENT STRATEGY, CONSIDERING:

#### 1. Design

- » The Print Building extension created using an efficient, lightweight truss steel frame, with cross laminated timber (CLT) floor panels spanning 6m.
- » Four complete new floors stacked at 4.1m floor to floor, achieving 2.8m clear to the underside of the truss, and a perceived height of 3.7m to the exposed CLT soffit.
- » Comprehensive retrofit through a human-centric design approach to deliver characterful, flexible, next generation 'healthy' workspace.
- » The Ink Building's design will maximise Design for Manufacture and Assembly (DfMA) potential being composed of a single efficient repetitive structural module.
- » Use of an innovative hybrid steel frame with CLT floor slabs.
- » M&E services will be modularised and exposed to

give a characterful and flexible workspace built around a central core with good daylight and views around the perimeter, which will itself be enlivened with terraces and balconies.

#### 2. Environmental

- » Embodied carbon intensity of whole development 50% lower than typical office.
- » DfP certified predicted 5\* NABERS rating, BREEAM 'Excellent' and WELL Core.
- » Operational carbon intensity 50% lower than typical London office.
- » Net zero carbon building in line with UK-GBC framework definition; residual emissions associated with manufacturing and construction to be offset at the completion of the project.
- » 125% uplift in biodiversity units for both area and linear based habitat.

#### 3. Social

- » Vibrant destination with enhanced public realm.
- » 3-5% of the total workforce during construction will be from under-employed groups (long-term unemployed, ex-offenders and young people not in education, employment or training (NEETS)), and 10% of total construction spend dedicated to local suppliers (with preference for SMEs).

#### 4. Economic factors

- » 10% of new space created as affordable workspace for SMEs.
- » Landsec is targeting a minimum of £205m social and local economic value generated during the project lifecycle (construction / management / occupation) with a potential of £420m.

**Operational carbon emissions (kgCO<sub>2</sub>/m<sup>2</sup> per year):** UKGBC interim Paris Proof targets (<125 kWh/m<sup>2</sup> per year) and NABERS DfP certified predicted 5\* Energy rating

**Embodied carbon emissions (Modules A1-A5) (kgCO<sub>2</sub>/m<sup>2</sup>):** 535 kgCO<sub>2</sub>/m<sup>2</sup> and 448 kgCO<sub>2</sub>/m<sup>2</sup> (including sequestration)

# 105 Victoria Street, Westminster, London



Project	105 Victoria Street
Client	BentallGreenOak / Welput
Planning authority	Westminster City Council
Current use	Retail/Offices
Planned use	Offices, plus retail
Size	46,450 m <sup>2</sup> (500,000 sq ft)
Project type (retrofit/redevelopment)	Redevelopment
Date of approval	2021

## CONTEXT

Originally constructed in 1976, the building housed a House of Fraser department store, together with offices. The building comprised of two basement, ground and 12 upper storeys and incorporated a covered colonnade along Victoria Street. The structure was a concrete beam and slab construction with an aluminium, glass and stone façade. The redevelopment of the building will deliver a multi-tenanted, community-focused office building that will become the UK's largest fully electric net zero emissions building.

### Limitations of existing building included:

1. Design
2. Heritage
3. Environmental
4. Social
5. Economic factors

## REASONS FOR REDEVELOPMENT/REFURBISHMENT

The project team considered the option to retrofit and extend the existing building, however due to the layout; column intensity and the floor to ceiling height within a large floor plate, retrofit was discounted as a viable option. Moreover, the whole-life carbon assessment confirmed that the new build option would be more carbon efficient.

The total embodied carbon is equivalent to six years of operational emissions from the existing building, meaning that there will be 54 years of positive carbon impact compared with retention of the existing building (based on the RICS standard 60 year lifecycle). The new building is also anticipated to deliver greater socio-economic benefits.

## FACTORS INFLUENCING THE DECISION TO RETAIN/DEMOLISH BUILDING

Whole-life carbon emissions, social impact, creating best-in-class office accommodation designed to be flexible and future-fit for rapidly evolving ways of working, enhancing occupant wellness through access to fresh air and exercise, promoting sustainable travel.

### 1. Design

- » The redevelopment will create 90,000 sq ft of public space with a central village square at street level with community-focused retail offer, and an urban farm with community allotments.
- » 2.8m theoretical floor-to-ceiling heights and façade design create abundance of natural light.
- » Almost 30,000 sq ft of greenspace and terracing.
- » Programme of 'inclusive wellness' with 200m 'walk and talk' track with views across London.
- » Multi-purpose room for hosting indoor sports, games and gatherings.
- » Activity zone for the arrival of pedestrians and cyclists; shower and locker rooms.

### 2. Environment

- » Openable windows for mixed-mode and natural ventilation.
- » Highest level sustainability ratings/ certifications: (NABERS 5.5\* rating; BREEAM 'Outstanding'; WELL 'Platinum'; Active Score 'Platinum 100').
- » Energy intensity aligned to RIBA 2030 targets proposed as part of 2021 planning application.
- » Embodied carbon below 700 kg CO<sub>2</sub>e/m<sup>2</sup> (A-C).

### 3. Social

- » Working with the nearby Grey Coat Hospital School, three basketball courts were set up on the site prior to demolition. On day one exhibition

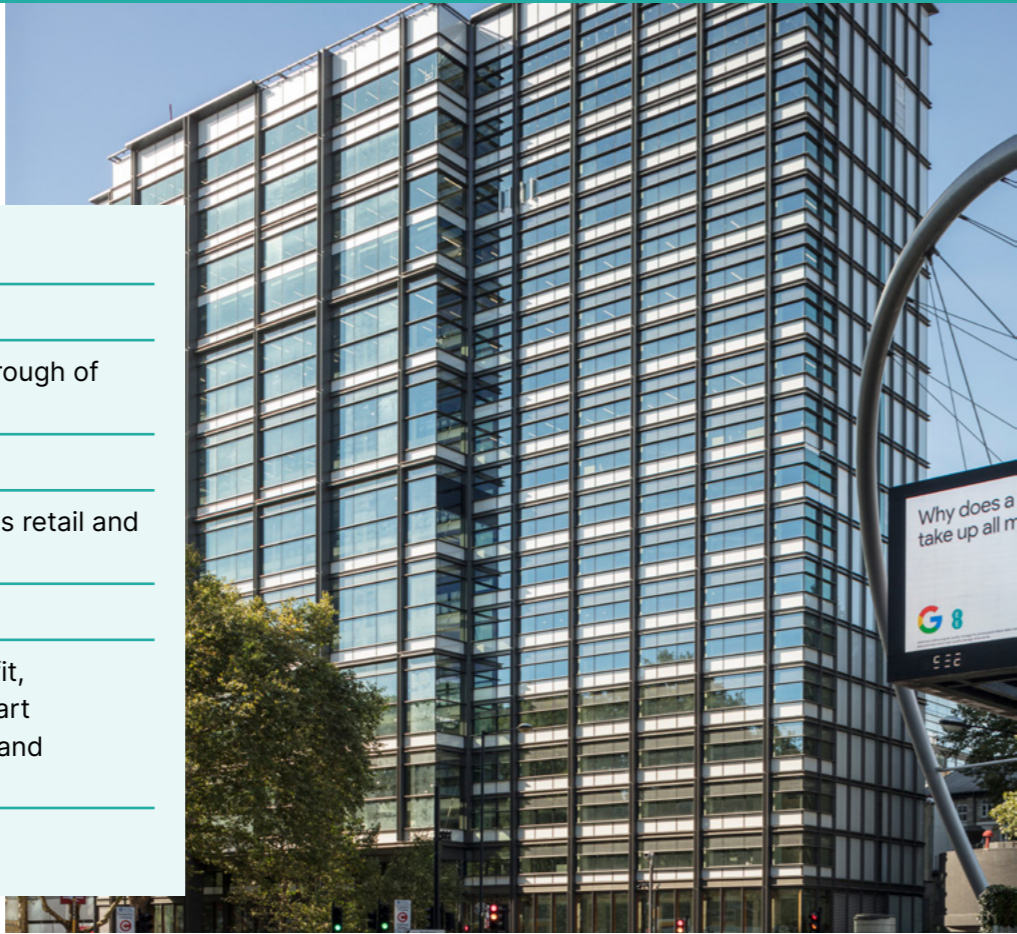
games were organised, working with the George Goldstone Charity, the UK's largest non-profit group dedicated to inspiring people to play and connect via 3x3 basketball. This was followed by giving the school's 540 students the opportunity to receive coaching.

- » Skanska also recently installed a 'green wall' in the school playground, which will provide a natural barrier to the road noise generated from increased traffic when events around Parliament require road diversions.
- » At the Abbey Centre, 10 minutes' walk from the site, which supports the local community with issues such as mental health, domestic abuse, legal advice, food banks and meals for rough sleepers, on the day they launched their social value strategy, Skanska and its partners generated donations of essential items for distribution to the local community via the Abbey Centre Pantry. They also redecorated two meeting rooms at the Centre, which helps them increase their revenues from this facility, and created a new wellbeing space known as 'The Lemon Pip Garden'.
- » Providing St Matthews Primary School behind the Abbey Centre with a new upgraded key stage 1 playground with green walls, sand pits and activity-based links to the environment.

### In the longer term, the developer is committed to:

- » Creating a new multi-sports facility in the building for Grey Coat and Westminster City School's future PE lessons.
- » Running a careers event for GSCE and sixth form students from the school.
- » Supporting Westminster Wheels, the charity which trains young local unemployed people in cycle mechanics, enabling bikes to be available at the Abbey Centre bike proficiency scheme.
- » Carrying out garden maintenance at St Matthews Primary School.

# The Bower



<b>Project</b>	The Bower
<b>Client</b>	Helical
<b>Planning authority</b>	London Borough of Islington
<b>Current use</b>	Offices
<b>Planned use</b>	Offices, plus retail and restaurants
<b>Size</b>	30,937 m2
<b>Project type (retrofit/redevelopment)</b>	Deep retrofit, including part demolition and extensions
<b>Date of approval</b>	2013

## CONTEXT

- » Disparate collection of under-performing and overclad but well-constructed buildings dating from 1967 which offered substantial office accommodation.
- » One building (207 Old Street) refurbished and reclad in 1984 for British Telecom.

## Limitations of existing building, considering

- Design**
  - » Site contained a disparate collection of dilapidated buildings
- Heritage**
- Environmental**
  - » Lack of onsite green infrastructure
- Social**
  - » Lack of community floor space and amenities
- Economic.**

## REASONS FOR REDEVELOPMENT/REFURBISHMENT

Create a best-in-class accommodation for future tenants, connect the buildings to their surroundings and improve public realm quality for occupiers and visitors and deliver the best outcomes for environmental sustainability and heritage protection. The partly landlocked site presented some inherent complexities, meaning that it would likely have been easier logistically to have cleared the site to facilitate a new build. However, in keeping with its 'retrofit first' approach, Helical wanted to extract financial and environmental value from the existing structures.

## FACTORS INFLUENCING THE DECISION TO RETAIN/DEMOLISH BUILDING

Foundations and structure were sound and viable for reuse. Adopting a retrofit plan rather than demolishing and rebuilding an estimated 12,439 tonnes of CO2 were avoided.

## PROPOSED BENEFITS OF SELECTED REDEVELOPMENT/REFURBISHMENT STRATEGY, CONSIDERING

### 1. Design

#### The Tower

- » Retention of structure and foundations; three additional floors included at roof level of The Tower with minimal additional strengthening to the retained structure.
- » Removal of original 1960's heavy cladding and screeded floors to help balance loads.
- » Added light weight "wings" on both principal elevations to provide each floor with enhanced daylight and double height volume.
- » Retention of brutalist concrete panels and bare faced internal concrete columns, preserving historical integrity and avoiding additional material use and waste.

#### The Warehouse

- » Completely retrofitted and stripped back to expose the existing structure.
- » Floorspace increased to 122,000 sq ft across 11 storeys with the addition of side and rooftop extensions and private roof terraces on three floors.
- » Steel frame and hollow-core precast planks used to minimise the building's weight and an exposed concrete finish was chosen to match the existing frame.

#### The Studio

- » New build construction of 18,500 sq ft across two storeys with a rooftop terrace.
- » Connected to the scheme's other buildings via a ramped pedestrian walkway.

### 2. Heritage

- » The retrofit respects the original building's heritage.

### 3. Environmental

- » Energy performance over 50% better than the current BBP Real Estate Environmental Benchmarks.
- » Glass wrapped façade with opening windows provides extensive natural light.
- » Inclusion of green and brown roofs.
- » 100% of timber procured from sustainable sources.
- » 12,439 tonnes of CO2 saved by choosing retrofit option.
- » 2,000 tonnes of construction waste diverted from landfill.

### 4. Social

- » Rooftop terrace accessible by all occupants.
- » The introduction of retail units at ground level create a diverse and dynamic mix for occupiers and community.
- » High ratio of cycle facilities per occupier.
- » Landscaped, pedestrianised outside spaces plus a variety of cafes, restaurants and bars.

- » Access to common facilities including double height reception, communal hub café and lounge.

### 5. Economic

- » Reuse of existing structure and foundations with additional floorspace added to structure.

# Sunlight House, Manchester



<b>Project</b>	Sunlight House
<b>Client</b>	Kinrise and Karrev
<b>Planning authority</b>	Manchester City Council
<b>Current use</b>	Office
<b>Planned use</b>	Office
<b>Size</b>	175,617 sq ft (net internal area)
<b>Project type (retrofit/redevelopment)</b>	Retrofit
<b>Date of approval</b>	2023

## CONTEXT

- » Designed by architect Joseph Sunlight, the office building was constructed in 1932 and was the tallest building in Manchester until 1962.
- » Grade II Listed in 1988 and within the Deansgate/ Peter Street Conservation Area.
- » In office use throughout its history, and had undergone previous partial refurbishments but no wholesale retrofit.
- » Bought by Kinrise and Karrev in 2022, with the intention of fully retrofitting and rejuvenating this iconic building.

## REASONS FOR REDEVELOPMENT/ REFURBISHMENT

- » Iconic building in the centre of Manchester, at a prime location for office space (adjacent to Spinningfields, which is a Grade A office location).
- » Create best-in-class flexible office accommodation as part of new ownership.
- » Provide Grade A office accommodation with the best possible sustainability credentials to meet future tenants' expectations.
- » Achieve this whilst preserving and celebrating the listed building's heritage, making this a central part of the retrofit scheme.

## FACTORS INFLUENCING THE DECISION TO RETAIN THE BUILDING

- » Retrofit approach the only suitable strategy for the listed building (demolition not an option due to harm this would entail).
- » Retaining existing building is the most efficient carbon strategy; i.e. not wasting the embodied carbon.
- » Client specialises in high-grade refurbishment of historic buildings, and upgrading such buildings to meet modern sustainability standards (based on the UK Green Building Council net zero carbon 2050 targets) and tenant expectations.

## BENEFITS OF SELECTED REFURBISHMENT STRATEGY

- » Range of suitable retrofit measures introduced, including the general refurbishment and upgrade of the windows to include secondary glazing. Double glazing was discussed with Manchester City Council (MCC), but secondary glazing was considered to provide the best energy savings whilst preserving the mostly original windows. Other options such as wall insulation were considered, but this would have had a greater impact on the building's significance than secondary glazing, which was calculated to have a similar impact on energy efficiency performance as the installation of double glazing.
- » Another key sustainability upgrade was the addition of solar panels to the roof. This was initially resisted by the Lead Conservation Officer at MCC, due to the impact on the listed building and wider conservation area. However, Historic England's best practice guidance had been applied, and this was presented to MCC, along with recent precedents for the installation of solar panels to higher graded listed buildings. This, in combination with the limited visual and physical impacts of the panels and the sustainability benefits provided, was sufficient to address these concerns.

- » Streamlining and upgrades to the M&E systems were also a central part of the proposals in order to improve the listed building's sustainability credentials.
- » The scheme is still in progress, but is on target to achieve the BREEAM Excellent and 4-star NABERS ratings.
- » MCC were overall very supportive of the refurbishment and retrofit works to the listed building, including providing sustainability upgrades.
- » The changing attitudes of the real estate sector with regard to the retrofit of historic buildings and the need to upgrade existing building stock, were central to this support. These provided precedents and examples of how such upgrades could be sensitively incorporated, in particular the consented solar panels.
- » Retrofit was always the required approach due to the property's status as a listed building, but beyond this retrofit is a key tenet of the client's approach to such projects. Through embracing the heritage of Sunlight House, a landmark scheme will be delivered for Manchester in both architectural and sustainability terms.

**Operational carbon emissions (kgCO<sub>2</sub>/m<sup>2</sup> per year) (Estimated):**  
12.03

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**Embodied carbon emissions (Modules A-C (excl. B6/7)) (kgCO<sub>2</sub>/m<sup>2</sup>):** 219.36



# Chaddesden House, Talbot Street, Nottingham

Project	Chaddesden House
Client	McLaren Property
Planning authority	Nottingham City Council
Current use	Office
Planned use	Site 0.15ha Existing office 3,685sqm GIA over 5 storeys + undercroft parking Proposed development 8,824 sqm GIA 318 bed PBSA over 9 storeys
Size	46,450 m2 (500,000 sq ft)
Project type (retrofit/redevelopment)	Redevelopment
Date of approval	2022



## CONTEXT

- » Early 1970s office building on sloping site, with ground, lower ground, sub-lower ground undercroft parking and three upper floors.
- » Historic stone wall on lower side of site retaining earth embankment.
- » Existing building occupied by Domestic & General Insurance, an important employer to the local economy. D&G had already committed to relocate to a new pre-let office development in the Station Quarter. Permission for redevelopment would help finance that relocation.
- » Historic character of Talbot Street (front elevation) and Wollaton Street (rear elevation) had been significantly eroded by 1970s development and more recent modern development.
- » The existing 1970s building was considered to be detrimental to the character of the conservation area.
- » Site located in Royal Quarter of Nottingham City centre, within Canning Circus Conservation Area.
- » Due to being in an elevated position, the existing and proposed buildings are within the setting of Grade II Listed buildings, and a registered historic park.
- » Site is a sustainable location for PBSA; approx. 500m walk distance from Nottingham Trent University campus. Bus stops 60m from site on route for bus travel to Nottingham University campuses, both 2 – 3 km away. Tram stop within 500m of site.

- » Nottingham City Council committed to becoming carbon neutral by 2028.
- » The City Council requested consideration be given to reuse of existing building ahead of redevelopment.

## Draft non-statutory Carbon Neutral Plan policy requirements:

- Minimum 30% betterment of building regulations for thermal insulation.
- Minimum 60% improvement on building regulations air permeability requirements.
- All occupied spaces to benefit from mechanical ventilation and heat recovery.

## LIMITATIONS OF EXISTING BUILDING

- » Lifespan of existing reinforced concrete building frame expected to be 50 – 60 years. Deterioration of the existing structure expected to be apparent within 10 years.
- » Use of High Alumina Cement (HAC) in existing structure suspected. HAC has since been banned for new buildings due to the potential for failure and structural collapse.
- » Less efficient fabric – 100mm brick skin, 100mm unfilled cavity, 100mm blockwork U-value around 1.6W/m2K. Could be upgraded to u-value of 0.5 W/m2K with additional insulation.
- » Building footprint inefficient for student accommodation layout.
- » Lift locations relative to escape travel distances for offices differ from residential. Two new lifts would need to be installed in a different location. Therefore substantial structural work would be required.
- » Additional escape stair (three in total) required due to travel distances.
- » Uncertain structural capacity to accept an additional storey of development. Intrusive investigation work required to examine structures.

- » Poor aesthetic quality in the conservation context.
- » The existing heating and hot water plant would have to be replaced throughout the building in order to meet required standards.
- » Floor to floor heights restricted by downstand beams beneath floor slabs, which may prevent required mechanical, electrical plumbing installations necessary to achieve sustainability in use requirements.
- » Currently passive ventilation only, which limits cooling capacity and occupant access to fresh air.
- » Electrical connection to the grid requires upgrade in capacity.

## PROPOSED BENEFITS OF SELECTED REDEVELOPMENT

- » No car parking proposed with new development. 128 secure internal bicycle spaces + 16 external bicycle spaces proposed, resulting in a net reduction in car use.
- » New building designed to BREEAM 'Very Good' standard and as such meets the requirements of relevant development plan policy.
- » New building will achieve 61% reduction in carbon emissions compared to a baseline new building as defined by the Building Regulations.
- » Draft carbon neutral plan relevant policies met and exceeded.
- » Proposals were assessed through HSE Planning Gateway 1 fire safety considerations and revised in order to pass the assessment.
- » New building designed to be adaptable to residential apartments for rent or sale should the demand for student accommodation decrease.
- » SuDS achieves 30% reduction in surface water run-off.
- » Small net gain for biodiversity although no specific policy requirement.

PART 6

# Wider recommendations & conclusion

## CHAPTER SUMMARY

- Wider report recommendations in detail
- Conclusion

# Wider recommendations

In addition to the recommendations surrounding the development and implementation of the supplementary Retrofit Optioneering Assessment Model discussed earlier in the paper, this report also makes the following recommendations.

## Make whole-life carbon calculations and assessments a national requirement

### Amend national building regulations

Existing national building regulations should be amended to require and standardise the reporting of whole-life carbon emissions of buildings in line with existing RICS guidance and BRE approved whole-life carbon tools. This should include a nationally-agreed method of calculation of whole-life carbon.

Currently, the best means of achieving this is through the implementation of the industry proposed Building Regulations Part Z<sup>42</sup> as part of the Carbon Emissions (Buildings) Bill<sup>43</sup>. This will also support the work that the construction industry is undertaking to meet the Government's legally binding net zero target of 2050, by assessing and reducing both embodied and operational carbon emissions.

Following the 2022 updates to Building Regulations Part L<sup>44</sup>, and forthcoming amendments predicted to be implemented in 2025 as part of the Future Homes Standard<sup>45</sup>, planning authorities need to update their planning policies and related carbon reduction targets for new and existing buildings.

The phasing out of fossil fuels and implementation of all electric buildings is not currently accurately reflected in assessments of a building's carbon impact. In recent years the national energy grid has reduced its reliance on fossil fuels, with wind, solar and green alternatives now accounting for a larger proportion of the energy produced. Indeed, over the past 14 years (2010-2024) the fossil fuel component of the National Grid has decreased by 69.6% from 0.490 CO<sub>2</sub>e/kWh to 0.149 CO<sub>2</sub>e/kWh.



### Utilise forthcoming National Development Management Policies (NDMPs)

National Development Management Policies, which are due to be brought forward as part of the Government's Levelling Up & Regeneration Act, should include a specific requirement to calculate whole-life carbon emissions as part of the planning process.

Any embodied or whole-life carbon emissions targets set as part of Building Regulations or National Development Management Policies should be nationally derived and aligned to ensure the delivery of the Government's legally binding net zero 2050 target. They should also consider the socio, economic, and environmental benefits that may result when considering whether retrofit or redevelopment is most appropriate.

It is recommended that these targets should apply to major planning applications, and not to minor planning applications, which are defined as:

- » Residential development of between one and nine dwellings
- » Development where the floorspace is less than 1,000 sq m
- » Development on sites less than one hectare
- » Changes of use less than 1,000 sq m.



## Make the sustainable retrofit of our historic environment a public benefit

The lack of clarity and nuanced policy concerning the balance between the protection of heritage assets and appropriate sustainability upgrades to these assets, is restricting the potential retrofit of such buildings. Whilst the retention of historic buildings reduces the need to rebuild and therefore reduces embodied carbon emissions, it should be recognised that without effective, energy focussed refurbishment, these buildings will be responsible for high levels of operational carbon emissions in their current state.

There is currently no clear reference to how sustainability considerations should be balanced against any harm caused to the significance of relevant heritage assets as a result of retrofit proposals, in either the NPPF or any other statutory policy and guidance.

In respect of the historic environment, the current NPPF is actually weighted in favour of conservation over mitigation for climate change but amendments to the NPPF to better align heritage and sustainability could cut operational carbon

emissions by up to 7.7 MtCO<sub>2</sub> per year, equivalent to 5% of the UK's carbon emissions associated with buildings, based on 2019 levels<sup>46</sup>.

The NPPF should be updated to explicitly state that well considered and justified sustainability upgrades to heritage assets should be considered a clear and meaningful public benefit to be balanced against any harm arising from a proposed development. This could be achieved through a simple addition to Paragraphs 203 and 204, whereby sustainability

upgrades could be added alongside optimum viable use as an explicit example of an important public benefit when proposals affect heritage assets.

Further consideration should be given by both industry and government on how to balance the need to protect our historic environment with the need to reduce our carbon emissions.



# Conclusion

In order to mitigate the worst impacts of climate change, we have to make decisions on how best to use a limited carbon allowance in order to deliver growth and associated social benefits.

This is being played out across the country, with very little consistency in how different projects are assessed. Our analysis of the industry and real world experiences of the pre-planning process has demonstrated that practitioners would benefit from clearer guidance on how to address these issues, due to inconsistency in guidance at a national and local level.

This inconsistency leads to uncertainty which has a number of significant impacts:

- ✗ Delays to the planning process, increasing the resource requirements from local authorities;
- ✗ Increasing costs to the design process;
- ✗ Slowing down the delivery of new commercial and residential floor space needed for economic growth;
- ✗ Some buildings emitting more operational carbon emissions throughout their lifetime;
- ✗ Limiting the industry's ability to deliver social benefits to local communities;
- ✗ Reducing the speed at which we can improve placemaking and create vibrant social spaces;
- ✗ Ultimately jeopardising our ability to meet our national 2050 net zero carbon target.



This paper demonstrates that there is a need for consistent and holistic national planning policy and guidance to compare retrofit and redevelopment options, which can then be implemented at a local level. As such, we require additional guidance within the existing planning and legislative framework to ensure the buildings we're planning for today are compatible with our net zero commitment. A number of policy amendments have been proposed

which would strengthen and align the fragmented approach to carbon emissions assessment, and how this is applied in the retrofit context. A supplementary retrofit optioneering model, covering a wide range of key considerations, has also been proposed.

The implementation of these recommendations would lead to a number of desirable outcomes:



Faster delivery of new homes and business spaces to support growth and levelling up. Fewer planning delays and decision appeals will lead to more homes and more jobs.



More rapid decarbonisation of buildings. Older, more carbon intensive buildings will be refurbished or replaced at a quicker rate.



Reduced burden on local authority planning teams. A consistent assessment model will reduce the amount of time needed by case officers to compare design alternatives.



Protection of historic buildings. Our built heritage will be secure, whilst allowing appropriate sustainable refurbishment to take place.



More social value delivered to communities. Communities will benefit from more inclusive placemaking, better stakeholder engagement and employment opportunities.

PART 7

# Appendix



# Retrofit Optioneering Assessment: Detailed key considerations

## Statutory requirements

### Fire strategy

Development proposals will need to comply with the latest fire standards. Existing buildings will need to ensure they have cladding and facing materials that comply with the latest fire safety standards.

Tall buildings will also need to ensure they comply with the latest guidance on the number of staircases with the Government recently announcing that they will impose a requirement for second staircase on all new residential buildings that are taller than 18 metres.



### Energy, overheating and ventilation performance

An existing building's energy performance will be a primary consideration for potential refurbishment projects. This will also have implications for both overheating and ventilation performance, and will be impacted by the requirements of Building Regulations Parts F<sup>46</sup>, L<sup>47</sup> and O<sup>48</sup>. Building facades will play a key part of this. Existing facades should be surveyed to determine air permeability, insulation performance, moisture ingress, daylight admittance, solar admittance and overall condition, including predicted lifespan, to determine relative impact on energy and overheating performance. The performance of new and proposed façades should be compared against recommendations and set out by Building Regulations Part L (as a legislative minimum) or against relevant LETI standards<sup>49</sup> (best-practice).

The specification and condition of existing building services should be considered, based on recommendations from specialist surveys. The age and likely replacement cycle of existing building plant will determine whether systems can be retained or replaced. The fuel source of systems should also be considered, especially with regard to removing fossil fuels as heat sources for buildings. The efficiency of building services should be compared for different options, and can also be assessed against Part L minimum standards as a baseline.

### Statutory listed buildings and conservation area status

In England certain buildings and areas are protected by legislation due to their special architectural and historic interest in recognition of the fact that these heritage assets are an irreplaceable resource which provide significant public value by conserving our past and providing tangible examples of our nation's history. These buildings and places are often unique examples of design that brings communities together.

Should a development propose alterations to listed buildings for retrofit measures, decision-makers should have special regard to the desirability of preserving the building or its setting, or any features of architectural and historic interest, as required by the Planning Listed Buildings Conservation Areas Act 1990 ('PLBCAA 1990'). The setting of listed buildings is also protected by Section 16 of same Act. The higher the grade of listed building the more

likely it is that retrofit measures will cause a degree of harm. Alterations affecting Grade I and Grade II\* listed buildings are likely to have a greater impact than those affecting Grade II buildings, though there is no hard and fast rule on this. Total or substantial demolition of a listed building on the grounds of sustainability is highly unlikely to be acceptable no matter the grade of the building due to the total or partial loss of significance this would likely cause.

In terms of considerations for installing retrofit measures into listed buildings, it should be noted that every building is different due to its location, orientation, design, construction, engineering services, and the way it is used, managed and maintained. All these factors influence energy use and the effectiveness of retrofit measures, and as such there is no 'one size fits all' solution or methodology for retrofitting listed buildings. Technical guidance on retrofitting historic buildings, including listed buildings is provided by Historic England. Historic England<sup>50</sup> also provides technical guidance on the installation of solar PVs, solar water heating, heat pumps, hydroelectric power, combined heat and power and biomass boilers in listed buildings<sup>51</sup>.

Conservation areas are a type of designated heritage asset and are protected by the PLBCAA 1990 which sets out that special regard should be paid to the desirability of preserving or enhancing their character and appearance. Development for



sustainability or retrofit reasons can have either direct or indirect impacts on the character and appearance of conservation areas. The scale and type of direct impacts which can occur within conservation areas is broad, and over time can cause cumulative and irreversible harm to character and appearance. On the lower end of the scale, retrofit measures which alter the external appearance of buildings within a conservation area, such as the replacement of single-glazed windows with double glazed windows, can cause harm through the loss of historic detail and character. And at the other end of the scale the demolition of a building which makes a direct positive contribution to the character and appearance of a conservation area could cause a high degree of harm, as could unsympathetic new development. Should retrofit measures which alter the external appearance of buildings, new development or total demolition be justified on sustainability grounds, this should be balanced against the harm arising to the conservation area.

## Accessibility

Inclusive and accessible design is hugely important when considering refurbishment to ensure that all stakeholders to a site, from those that work there to those that visit, can participate in, and feel welcome to any new scheme that is created.

As a minimum, accessibility is determined in accordance with Building Regulations Part M<sup>52</sup>. This may also be covered via requirements for Health Impact Assessments. It is recommended that a screening stage considers how relevant accessibility outcomes are to the different options, and how the proposed design responds to the desired outcomes.

Considerations should also be given to how people access the space from a transport perspective, the technological provisions to make the space accessible and ensuring the site design is one that enhances the workforce or customer experience<sup>53</sup>.



## Building and urban design

It is expected that, for all development options, a comparison of building and urban design be presented, including issues such as:

- Design and character
- Layout
- Public realm and placemaking
- End of trip facilities.

As these issues are well known aspects of the planning pre-application process, they are not covered within this report in detail.

## Building structure

The structure of existing buildings should be thoroughly investigated to assess current condition/lifespan, loading capacity, adaptability to alternative layouts, floor to ceiling height, floor plate depth, space/loading for new building plant, adaptability to accessibility requirements and any unknown issues relating to the availability of architectural and engineering records.





## Heritage (non-statutory)

With regard to the potential for retrofit, the key heritage consideration is what impact that development will have upon the significance and/or setting of designated and non-designated heritage assets.

The following includes a series of factors, additional to those previously set out, which influence decision-making from a heritage perspective, but it should be noted that when making decisions on applications affecting heritage assets, particularly in urban areas, multiple assets may have the potential to be affected by development. As such decision-makers are likely to be making a series of assessments on different types of heritage assets as they often have nested and overlapping architectural, historic and/or archaeological interest and settings.

### World Heritage Sites

World Heritage Sites (WHS) are included on the World Heritage List for being of 'Outstanding Universal Value' and are treated as a designated heritage asset within the NPPF. Designation of a WHS by UNESCO does not confer any additional statutory controls, but protection is afforded through the planning system as well as through the other designations (listed buildings, conservation areas, etc.) that will typically cover elements, if not the whole, of a WHS. As such, the heritage significance of a WHS will inevitably be reflected, at least in part, in the significance of any listed building, conservation area or other heritage asset that forms part of it. The planning controls and the principles influencing decision making which apply to any such heritage assets within a WHS are set out above, and apply when making decisions on retrofit measures and sustainable developments. UNESCO and the Advisory Bodies to the World Heritage Committee (ICCROM, ICOMOS & IUCN), have issued guidance for assessing impacts from projects that could potentially affect World Heritage Sites<sup>54</sup>.

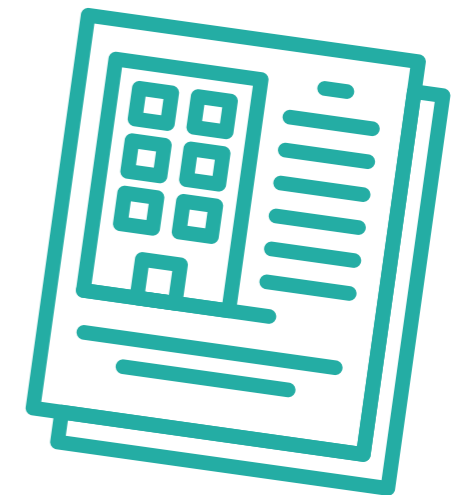
Note that the level of protection afforded to the heritage assets described above is subject to change as a result of the Levelling Up and Regeneration Act.

### Non-designated heritage assets

The decision making principles for any direct alterations required as part of retrofit measures to non-designated heritage assets are much the same as for listed buildings, with two important caveats: 1) they are not protected by legislation in the same way listed buildings are, and so 2) the planning system cannot control works to the interior of a non-designated heritage asset in the same way as it does for listed buildings. As non-designated heritage assets are usually only of local interest, as opposed to the national interest of listed buildings, they may be able to tolerate a greater degree of external alteration, so long as a balanced judgement is taken which has regard to the scale of any harm or loss and the significance of the heritage asset (NPPF para. 203). For this reason, demolition of a non-designated heritage asset on sustainability grounds is more likely to be acceptable than it is for listed buildings. However, if the building makes a positive contribution to a conservation area, the principles set out in the above 'conservation area' section above apply, or if it is within the setting of another heritage asset then the guidance in the 'setting of heritage assets' section above applies. Similarly if the impact of a development is limited to the setting of a non-designated heritage asset only, then the principles on setting detailed above apply.

### Setting of heritage assets

All heritage assets have a setting, irrespective of the form in which they survive and whether they are designated or not. The setting of listed buildings is protected by Section 16 of the PLBCAA 1990, whereas other assets only derive protection from national and local policy requirements. Historic England's 'Good Practice Advice Note 3: The Setting of Heritage Assets (2nd Ed.)' (2017) sets out the staged approach to identifying the nature and extent of a heritage asset's setting, what contribution it makes to the heritage asset's significance and how to assess the impact(s) of development on that setting, and thereby the asset's significance<sup>55</sup>.



## Viability

### Developer viability

Developer viability is the viability of the different options from the perspective of a developer.

Depending on the scale of the proposals and the degree of difference between different options it may be appropriate to assess the developer viability of options. This could follow a residual value approach where the residual land value of each option is assessed taking account of construction and design costs, and sales values. If the scale of the scheme and/or stage in the process does not justify a full appraisal then a more qualitative review can be carried out.

### Whole-life value

Developer viability and occupier viability can be combined together to give an overall assessment of the financial costs and benefits of options. The benefit of this approach is that it overcomes possible market failures where prices do not fully reflect costs and benefits of sustainable design.

Depending on the scale of the proposals and the degree of difference between different options it may be appropriate to assess the whole-life value of options. This could be an alternative or

### Occupier viability

Occupier viability is the viability of the different options from the perspective of an occupier and assumes one single renting occupier.

The rent paid may or may not fully reflect the occupier benefits of reduced costs associated with more sustainable/lower operational carbon impact outcomes, for example.

Depending on the scale of the proposals and the degree of difference between different options it may be appropriate to assess the occupier viability of options. This could follow a discounted cash flow approach where each option is assessed taking account of operational costs and revenues. This should focus on building operational costs savings associated with different sustainable design and energy supply solutions and may not need to be a full appraisal covering other operational costs. If the scale of the scheme and/or stage in the process does not justify a full appraisal then a more qualitative review can be carried out.

complementary approach to developer viability and occupier viability appraisal. This could follow a discounted cash flow approach where each option is assessed taking account of capital and operational costs and revenues. This should focus on building operational costs savings associated with different sustainable design and energy supply solutions and may not need to be a full appraisal covering other operational costs. If the scale of the scheme and/or stage in the process does not justify a full appraisal then a more qualitative review can be carried out.



## Environmental impact

### Whole-life carbon

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An assessment of whole-life carbon emissions should be carried out for all development options, using the RICS methodology, and covering embodied and operational emissions from modules A, B and C. Figures should be presented using a consistent, transparent and standardised process, potentially utilising the City of London's Carbon Options Guidance toolkit<sup>56</sup>.

### Climate resilience

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The ability of the proposed development to withstand the impacts of a changing climate should be considered. Warmer, wetter winters and hotter, drier summers are already affecting our buildings, with internal overheating, surface water runoff and the urban heat island effect being primary issues resulting from development. Internal overheating risk should be assessed using CIBSE's TM 52 guidance<sup>59</sup>. Sustainable drainage strategies should be developed using the CIRIA SuDS manual<sup>60</sup>. Whilst it is difficult to assess the impact of new development on the urban heat island effect, the various benefits of urban cooling through landscaping and material selection should be outlined as part of the comparison.

### Biodiversity and urban greening

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Development should aim to improve the biodiversity and green infrastructure on the site. The Defra Biodiversity metric<sup>57</sup> should be used, with national legislation requiring a minimum 10% improvement in biodiversity from January 2024 onwards. In addition, the GLA's urban greening factor methodology<sup>58</sup> can also be used to compare the urban greening benefits from different development options. For both biodiversity and urban greening, calculations should be carried out suitably qualified individuals, including ecologists and landscape architects.

### Air quality

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The air quality impact of different development options should be considered, with emissions arising from building services and associated transportation included in any assessment. Particular attention should be given to particulate matter and nitrogen oxide emissions, given the potential negative impacts these emissions can have on human health.

### Circular economy

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During early stage design options assessment, particular attention should be paid to how building materials can be retained or reused, either onsite or in the locality. Circular economy principles should be included for any scheme involving partial or wholesale demolition to avoid unnecessary resource use and divert waste from landfill. Pre-redevelopment and pre-demolition audits are important tools which should be used to establish whether building components can be reclaimed and how any demolition materials will be managed. Additional guidance on circular economy design strategies at pre-planning stages is available from the GLA<sup>61</sup>.

### Grid capacity

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The capacity of the local electricity grid can have significant implications for the refurbishment or redevelopment of buildings. For projects involving additional floor space, changes of use or switching heat sources from fossil fuels to electricity, local grid capacity should be investigated to ascertain whether the proposed scheme can be accommodated within the existing supply, and if not, what mitigation measures are required to ensure delivery of the proposed scheme.

### Adaptability and flexibility

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The potential future flexibility and adaptability to different building uses has a critical implication for the longevity and lifespan of a building. Buildings should be designed around 'long life, loose fit' principles that encourage consideration of multiple uses over a building's life. As such, a comparison of how new or existing buildings can be adapted to different user requirements should be included as part of the assessment process.



## Socio-economic impact

Social value creation has also become an integral part of decision-making in the real estate sector in recent years, especially since the priorities associated with sustainability have become increasingly subject to greater levels of scrutiny, governance and innovation.

As social value becomes more deeply embedded into decision-making within the planning system, it will therefore also have a vital role to play when considering retrofit or refurbishment. Both developers and planners will need to have a greater understanding of the impacts of both and how they align with local needs and opinion. Social value benefits can be articulated in either qualitative or quantitative terms, and the 'baseline' of current social value provided by the existing building should be clearly set out to understand the uplift arising from development or retrofit.

### Gross Value Added (GVA)

Net economic benefits of the different options should be considered. This should follow good practice guidance as set out in the Treasury Green Book<sup>62</sup> and DLUHC Appraisal Guide<sup>63</sup>, for example. Economic benefits include on-site jobs and GVA and wider multiplier and displacement effects. The benefits of each of the options should be assessed.

### Health and wellbeing

Good health and wellbeing are essential to our quality of life and our life expectancy and therefore must be considered when thinking about the possible and long term impacts of refurbishment. The places where we live and work have a key impact on our health and wellbeing and the design of these places, both preconstruction and post construction, can affect how we feel.

Although bad design can create circumstances and actions that harm people, good design can ensure that stakeholders that come to a site can become happier, live more fulfilled lives, and improve the health and wellbeing of visitors<sup>64</sup>.

Health and wellbeing will therefore be a critical consideration for new building occupants. Issues such as internal air quality, daylight, thermal comfort and opportunities for physical and mental relaxation should be compared for different design options. Some local authorities also require health impact assessment (HIA) to be carried out, and this can vary in the level of detail and analysis required. A screening stage analysis should consider how relevant health and wellbeing outcomes are to the different options, and what mitigation measures might be needed to both reduce negative impacts, and provide positive benefits.

### Jobs, skills and training

Job creation and skills development should always be considered in any decision-making process to ensure local people are benefitting in a tangible way.

Analysis should focus on the type of jobs and skills being created by the scheme, the long-term sustainability of these jobs and importantly, as can be the case with retrofit, if new jobs and skills are being added to the local economy are also important factors on the amount of social value created<sup>65</sup>.

Skills and training opportunities should be assessed at both the construction and operational stages. This may be covered via requirements for education and skills strategies which some local authorities require. A screening stage assessment is recommended that considers how relevant skills and training outcomes are to the different options and if it is anticipated that the outcomes could vary significantly between options then an appropriate assessment is carried out of each of the options.

### Other social value benefits/impacts

At the core of any scheme, the focus should always be on how the local and wider community is benefitting from it. The improvement of local infrastructure is an obvious way that any scheme can benefit a whole community and ensure that local people benefit in many different ways<sup>66</sup>. This could be through supporting the development of transport infrastructure, schools, and health services via in kind donations or s106 and Community Infrastructure Levy (CIL) contributions.

A screening stage could be used to consider how relevant potential social value outcomes are to the different options, and if it is anticipated that the outcomes could vary significantly between options then reasons for this and relevant design responses should be articulated. There is a range of research in to metrics for estimating such benefits, with for example details included in the DLUHC Appraisal Guide.



## Community cohesion

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Real estate has a unique role in being able to create community cohesion and integration. Creating and designing spaces that are welcoming to different types of people whilst simultaneously bringing them together can create strong local economies and shared sense of responsibility for these spaces.

The industry must always ensure not to create spaces that are unwelcoming or create stigmatisation of the communities who live or visit these places<sup>67</sup>. Further guidance on the cost to local economies lack of community cohesion can have and how to design places that promote cohesion, is available from the RICS.

## Overall costs and benefits

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The Treasury Green Book sets out the process for carrying out overall cost-benefit appraisal. A holistic cost benefit appraisal quantifies all relevant costs and benefits, including environmental, social and economic impacts. Some variables and assessment may be best treated in a qualitative way and this will depend on the specifics. In order to determine impacts on a level playing field, an overall appraisal

could be conducted to account for the financial/viability, and it may be useful to structure this around the Treasury Five Case model headings of strategic, economic, financial, commercial and management<sup>68</sup>. This may not need to be a full cost benefit appraisal and for example tools such as a Red/Amber/Green (RAG) scoring of topics by option may be a useful way to summarise the work.



## Delivery strategy

### Construction stage impacts

Assessing the impacts of the construction stage during the early design process will help to mitigate against negative consequences. The environmental impact of construction activities, such as noise, dust, and emissions, should be assessed and mitigated to minimise harm to the surroundings, accounting for the predicted construction programme duration for different development options. Community engagement and communication are also essential to address concerns and maintain a positive relationship with stakeholders throughout the construction phase.

### Community engagement

Community engagement is a way for developers, local authorities, and communities to collaborate to make decisions that will create long lasting social value for people in the present and in the future.

Community engagement can lead to improved outcomes by learning about community aspirations, concerns and values of communities and co-creating solutions<sup>69</sup>. If incorporated into the decision-making processes, decision makers are better informed and better able to meet community needs.

### Decanting strategy

The optioneering process should also consider the impact on the occupants of the building whilst the retrofit is taking place, and this should emerge from the community and stakeholder engagement process as to the acceptability and impact of the various decanting strategies, whether they be full decant, building by building, daytime decanting etc. Works are generally carried out more quickly, safely, and with less disruption with a full decant, but the costs associated with this, the proximity, suitability and quality of the property being decanted to, and the potential disruption to occupants and businesses should be carefully considered.

### Stakeholder engagement

Stakeholder engagement helps landowners and anchor organisations to build positive relationships and to work together for the benefit of local areas.

It is a key factor to any successful refurbishment as it provides an opportunity for landowners and managers to explain proposals and gain valuable input to create longer lasting and more sustainable projects<sup>70</sup>.





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