



Housing & Land Delivery Board

Date: Wednesday 18 October 2023

Time: 10.00 am **Public meeting** Yes

Venue: Room 116, West Midlands Combined Authority, 16 Summer Lane, Birmingham. B19 3SD

Membership

Councillor Ian Courts (Chair)	Portfolio Lead for Housing & Land
Councillor Mike Bird	Walsall Metropolitan Borough Council
Councillor Peter Butlin	Warwickshire County Council
Councillor Matthew Dormer	Redditch Borough Council
Councillor Steve Evans	City of Wolverhampton Council
Councillor Jayne Francis	Birmingham City Council
Councillor Tony Johnson	Cannock Chase District Council
Councillor Wayne Little	Dudley Metropolitan Borough Council
Councillor Andy Mackiewicz	Solihull Metropolitan Borough Council
Jo Nugent	Homes England
Councillor Richard Overton	Telford and Wrekin Council
Kevin Rodgers	West Midlands Housing Association Partnership
Councillor Laura Rollins	Sandwell Metropolitan Borough Council
Councillor Chris Schofield	Shropshire Council
Councillor Richard Smith	Nuneaton and Bedworth Borough Council
Councillor Paul Turner	Tamworth Borough Council
Suzanne Ward	Environment Agency
Councillor David Welsh	Coventry City Council
Councillor David A Wright	North Warwickshire Borough Council

The quorum for this meeting shall be eight members.

If you have any queries about this meeting, please contact:

Contact Tanya Patel, Governance Services Officer
Telephone 07825 356685
Email tanya.patel@wmca.org.uk

AGENDA

No.	Item	Presenting	Pages
Items of Public Business			
1.	Apologies for Absence	Chair	None
2.	Declarations of Interests (if any) Members are reminded of the need to declare any disclosable pecuniary interests they have in an item being discussed during the course of the meeting. In addition, the receipt of any gift or hospitality should be declared where the value of it was thought to have exceeded £25 (gifts) or £40 (hospitality).	Chair	None
3.	Chair's Remarks (if any)	Chair	None
4.	Minutes - 10 July 2023	Chair	1 - 6
5.	West Midlands Strategic Place Partnership Update	Lauren Rigby - Hopkins / Aysha Bateman	7 - 18
6.	Affordable Homes Programme and Supply Strategy Update	Rob Lamond	19 - 26
7.	Homes for Future: Draft Strategy	Mia Higgins	27 - 94
Date of Next Meeting			
8.	Wednesday 17 January 2024 at 10.00am	Chair	None



**West Midlands
Combined Authority**

Housing & Land Delivery Board

Monday 10 July 2023 at 3.00 pm

Minutes

Present

Councillor Ian Courts (Chair)

Councillor Steve Evans

Councillor Jayne Francis

Councillor Andy Mackiewicz

Councillor Richard Overton

Councillor Richard Smith

Councillor David Welsh

Portfolio Lead for Housing & Land

City of Wolverhampton Council

Birmingham City Council

Solihull Metropolitan Borough Council

Telford and Wrekin Council

Nuneaton and Bedworth Borough Council

Coventry City Council

In Attendance via MS Teams

Councillor Matthew Dormer

John Mather

Councillor Wayne Little

Redditch Borough Council

Homes England

Dudley Metropolitan Borough Council

Item Title No.

1. Apologies for Absence

Apologies for absence were received from Councillor Bird (Walsall), Jo Nugent (Homes England), Kevin Rodgers (West Midlands Housing Association Partnership), Councillor Rollins (Sandwell) and Councillor Marshall (Shropshire).

2. Notification of Substitutes

Jo Nugent (Homes England) had nominated John Mather to attend on her behalf.

3. Chair's Remarks

The Chair expressed his thanks to the previous Chair, Councillor Bird, for chairing the board over the last 5 years and all his work on the housing and land portfolio. The Chair also conveyed thanks to the Executive Director of Housing, Property and Regeneration, Gareth Bradford who was leaving the WMCA at the end of the week, for all the successes achieved during his time with the organisation.

4. Terms of Reference

The terms of reference for the board were noted.

5. Minutes - 24 April 2023

The minutes of the meeting held on 24 April 2023 were agreed as a true record.

6. Quarterly Report on 2023/24 Housing and Land Portfolio Deliverables, and Progress on Housing and Land Annual Business Plan

The board considered a report of the Executive Director of Housing, Property and Regeneration that provided a quarterly update on progress in delivering the high-level deliverables for the Housing and Land Portfolio as co-developed by the Housing & Land Delivery Steering Group and Delivery Board throughout 2023 and agreed by the WMCA Board in February 2023.

The Head of Strategy and Analysis, Rob Lamond, outlined the key activities on the housing and land deliverables to date and reported that the deliverables reflected the 4 main asks agreed in the devolution deal.

In relation to an enquiry from the Chair regarding whether the WMCA had any intelligence on the property market as the press was talking this down, the Executive Director of Housing, Property and Regeneration, Gareth Bradford, reported that there was still a strong market in the West Midlands and strong housing demand across the region. He added that companies were looking to invest here and referred to the new partnership with SEGRO that includes a commitment of £2bn worth of investment in the West Midlands. It was agreed that market intelligence would be included in this report for future meetings.

In relation to an enquiry from Councillor Francis regarding housing and regeneration projects that are coming forward, the Head of Strategy and Analysis undertook to circulate a list of projects to board members for information.

Resolved that:

1. The positive achievements against each of the Housing and Land Portfolio's approved Annual Deliverables in Q1 2023/24 be noted;
2. The key performance highlights as set out in Section 3 of the report be noted;
3. The positive performance and effective deployment of WMCA's devolved housing and land funds illustrated by the schemes summarised in the confidential annex to this report (many of these schemes are now in delivery phase, having progressed through to the end of the process which shows the role of the WMCA in unlocking, accelerating and problem solving on 'difficult to deliver' schemes be noted.

7. Future Housebuilding Strategy

The board considered a report of the Executive Director of Housing, Property & Regeneration that summarised the work to date on the Future Housebuilding Strategy, sought comments on the summary document, '*Future Housing Building Strategy, West Midlands- A Leading Region for Future Housebuilding*' (attached as Annex 1) and sought endorsement to the formation of a task and finish working group to develop the full strategy.

The Executive Director of Housing, Property and Regeneration, Gareth

Bradford, outlined the context to Future Housebuilding Strategy including the work undertaken to date around advanced manufacturing in construction (AMC), zero carbon homes, the planned regulatory changes by the Government to building regulations in 2025 and the need for strong leadership regionally and locally to support the industry through these challenges. He advised that the full strategy document would be submitted to the board for consideration in October.

The Chair of the Future Homes Taskforce, Mark Farmer, highlighted key areas in the report including the overarching approach to the initial draft strategy and the reasons why change is needed. He also reported that London and Manchester are both already moving in this direction and the West Midlands needs to show leadership and go ahead of the national standards in 2025.

The Chair put forward the following points.

- 1) Housing is market driven, how are you engaging with the building industry and, have you the support of major developers or builders?
- 2) Are we clear on the specific outcomes of the strategy. What will we change? Net Zero/ decarbonisation is done for a reason, what are we getting out of this? Energy efficient homes is not new.
- 3) A holistic approach to carbon is needed; need to look at components and whether these are UK or regional based. House building is a carbon intense industry.
- 4) The West Midlands is at the centre of the UK, a mini prospectus is needed to promote how it is best connected to industry and technology.
- 5) The National Brownfield Institute; need to ensure this is fully utilised.

Councillor Mackiewicz (Solihull) reported of the need to utilise technology for housing building noting 3D printing of houses and to consider what is happening in the United States.

Mark Farmer reported the scale and experience was diverse in the United States but concurred that technology needs to drive a different housing building process as the current house building model was not sustainable. He agreed that the National Brownfield Institute needs to be exploited further, de-carbonising homes is needed for better outcomes and to address carbon in homes.

The Chair reported that engagement is needed with the industry to ensure there is 'buy-in' to modern methods of construction and to the retrofitting of homes.

Councillor Evans (Wolverhampton) commented that he supported the direction of travel but wanted to see a concise strategy document submitted in October. He also expressed concern regarding any extra costs resulting from the Future Housebuilding Strategy and the need to ensure cost assumptions are as accurate as possible.

The Executive Director of Housing, Property and Regeneration, Gareth

Bradford, reported that a lot of work has been undertaken with the industry and local authority teams on the technical standard and agreed accurate costs were vital along with the need to provide certainty to the market. He advised that industry and investors were aware of the legal requirements for housebuilding that would have to be met by 2025 along with net zero standards.

Councillor Welsh (Coventry) cautioned against putting forward a standard that cannot be met and considered this was a shared challenge and business also needs to find a solution. He also reported that he did not want housing numbers to be reduced because of increased costs.

The Executive Director of Housing, Property and Regeneration, Gareth Bradford, advised that there would be a phased implementation of the standards (referred to in the strategy) and he was very mindful of the cost implications. He reported that industry was responding now to the likely standard requirements.

In relation to follow-up question from Councillor Welsh as to how the standard would be enforced, the Executive Director of Housing, Property and Regeneration, Gareth Bradford reported that the 2025 standard would be implemented through building regulations and whilst the WMCA is not a planning authority, it could attach conditions to its funding.

Mark Farmer reported that the industry was also having to change as a result of the skills crisis, the labour force challenge and the zero carbon regulations.

The Chair concluded the discussion by stating that he wanted the West Midlands to be in a better competitive position as a result of the Future Housebuilding Strategy.

Resolved that:

1. Progress on the work to date to develop a Future Housebuilding Strategy for the West Midlands (a Housing and Land Portfolio Deliverable) be noted;
2. The wide-ranging input from the Future Homes Taskforce, Commercial Property Taskforce, local authority partners and other stakeholders across the region to the development of the strategy be noted;
3. The key messages and direction of travel set out in the summary document (Annex 1) to inform the development of the full strategy over the Summer/Autumn 2023 be noted and
4. The formation of a task and finish working group to develop and refine the future housebuilding strategy document in line with the summary document be endorsed.

8. Town Centres: Update and Direction

The board considered a report of the Executive Director of Housing, Property and Regeneration that provided an update on the latest thinking regarding producing a specific prospectus/guide to support locally led town centre

projects (in accordance with the objectives of the Housing & Land Delivery Board).

The Executive Director of Housing, Property and Regeneration, Gareth Bradford, reported that the proposal to produce a prospectus or equivalent (in collaboration with local authorities and stakeholders) would support the delivery of, and investment in, locally led projects in town centres. The WMCA would seek to add value by looking at how to overcome obstacles with regards to the regeneration of town centres and land ownership issues and seek to improve investment opportunities.

Councillor Evans (Wolverhampton) reported that he was happy to support the proposal but wanted to see examples of intervention/ where money has been spent, noting that every town was different and town centre regeneration was more than just the buildings. He also enquired as to who decides where the WMCA money is invested.

The Executive Director of Housing, Property and Regeneration, Gareth Bradford, reported that the Portersfield Scheme, Dudley; Bull Street, West Bromwich and schemes in Shrewsbury and Telford were examples of where intervention has made a difference and underlined the need to unlock private sector investment in town centres. He added that the prospectus for town centres would be similar to that produced for the Investment Prospectus which has attracted significant capital investment into the region since it was first launched in 2018.

In relation to who determines the funding decisions, Gareth Bradford advised that decisions are taken by the Investment Board following receipt of funding applications that comply with the funding criteria.

Councillor Overton (Telford & Wrekin) reported the environment for town centres has been very challenging since the pandemic, with people continuing to work from home, and reported of the need to attract people into town centres for leisure activities.

Councillor Welsh (Coventry) reported that he was unsure of the benefits of producing a prospectus for town centres but was open-minded on the matter.

The Executive Director of Housing, Property and Regeneration, advised that the Investment Prospectus does make a difference in attracting investment to the region and could discuss with Councillor Welsh any concerns he might have to ensure the prospectus adds value.

Resolved that:

1. The proposal for the WMCA to produce in collaboration with local authorities and other stakeholders, a prospectus or equivalent supporting guide to support the delivery of, and investment in locally-led projects in town centres, helping those projects make the case to access public and private funds and ultimately support delivery on the ground be endorsed;
2. The proposal for the WMCA to work with the Town Centres Taskforce

and Delivery Steering Group to consider the precise nature and form of the prospectus or guide, to be brought to a future meeting of the Housing and Land Delivery Board for consideration.

9. Exclusion of the Press & Public

Resolved:

That in accordance with Section 100A(4) of the Local Government Act 1972, the press and public be excluded from the meeting for the following items of business as it involves the likely disclosure of exempt information relating to the financial or business affairs of any particular person (including the authority holding that information).

10. Housing & Land Funds Dashboard

The board considered the Housing and Land dashboards on the Brownfield Housing Fund, National Competitive Fund and Land Fund that provided an update on performance since the last meeting.

The Head of Strategy & Analysis, Rob Lamond reported that he would outline the application process for housing and land funds at the next meeting along with the funding rules. He also undertook to circulate the application forms to the board for information.

Resolved: That the report be noted.

11. Wednesday 18 October 2023 at 10.00am

The meeting ended at 4.30 pm.



**West Midlands
Combined Authority**

Housing and Land Delivery Board

Date	18 October 2023
Report title	West Midlands Strategic Place Partnership Update
Portfolio Lead	Councillor Ian Courts
Accountable Director	John Godfrey, Interim Executive Director of Housing, Property and Regeneration, West Midlands Combined Authority Email: John.Godfrey@wmca.org.uk
Accountable Employee's	<p>Dr Colin Clinton, Head of Business Development & Partnerships, West Midlands Combined Authority Email: Colin.Clinton@wmca.org.uk</p> <p>Rob Lamond, Head of Strategy & Analysis, West Midlands Combined Authority Email: Rob.Lamond@wmca.org.uk</p> <p>Lauren Rigby-Hopkins, Programme Support Officer, West Midlands Combined Authority Email: lauren.rigby-hopkins@wmca.org.uk</p> <p>Aysha Batman, NGDP - Housing, Property and Regeneration, West Midlands Combined Authority Email: aysha.bateman@wmca.org.uk</p>

Recommendation(s) for action or decision:

The Housing & Land Delivery Board is recommended to:

- a) **Note and endorse** the significant progress made in developing a West Midlands Strategic Place Partnership with Homes England.
- b) **Note** the 2023-24 revenue funding opportunity available for housing and housing-led mixed-used development schemes, where Local Authorities can submit applications for priority projects.
- c) **Note** the intent for consultation on the work to date and how best the Strategic Place Partnership (SPP) business plan can support delivery across the region.

1.0 Purpose

- 1.1 The purpose of this report is to update Housing & Land Delivery Board on the significant progress being made with the development of a West Midlands SPP, following the Trailblazing Deeper Devolution Deal announcement in March 2023. The details provided below outline the work and engagement undertaken to-date, the strategic direction of the partnership and the next steps to formally launching the SPP with Homes England.
- 1.2 The report also provides details on the Resource Departmental Expenditure Limit (RDEL) revenue funding opportunity from Homes England, which is now open for applications from local authorities to support the delivery of priority housing-led sites.

2.0 Context and Background

- 2.1 The West Midlands Trailblazing Deeper Devolution Deal outlined a commitment from DLUHC and their agency, that they will work with both parties to establish an SPP between WMCA and Homes England which supports the region's ambitious regeneration plans, formalised through a non-legally binding Memorandum of Understanding (MoU), and supported by a Delivery Plan.
- 2.2 The intention of the SPP is to outline how best the two bodies can work together with Local Authorities and create a more united approach to delivery, optimising expertise, funding and pipeline building which should encourage the delivery of priority developments.
- 2.3 Prior to the Trailblazing Deeper Devolution Deal announcement, WMCA had been working with Homes England to scope the purpose and rationale of an SPP, with various updates shared at Housing and Land Delivery Steering Group and Housing and Land Delivery Board.
- 2.4 Both parties have been working together to develop an MoU agreement which outlines shared ambitions, formalising the SPP ahead of a Delivery Plan.
- 2.5 In 2022-23, the ongoing partnership development unlocked Homes England revenue funding opportunities for the region, enabling Local Authorities to apply for an allocation of the £150,000 budget, supporting delivery of their priority housing-led developments.
- 2.6 The success and demand for revenue funding from 2022-23 has strengthened Homes England's commitment for 2023-24, with £400,000 allocated to Local Authority schemes in the West Midlands. Applications have now been received across constituent and non-constituent authorities and allocation of funding is underway by Home England.

3.0 SPP Programme

3.1 The programme of work started with discussions with Homes England about how the SPP should be developed. Between WMCA and Homes England various draft MoUs have been worked up which will go through both governance structures before being signed by both parties. Alongside this work on the Business Plan and RDEL funding will continue. An indicative timeline of completed and scheduled work is outlined below:

3.2 This programme incorporates an opportunity for extensive engagement across local authority partners, both ahead of the MoU launch and throughout the development of a supporting Business Plan.



4.0 SPP Strategic Direction and Priorities

4.1 Whilst the SPP Business Plan will provide greater detail on the delivery outputs of the SPP, the MoU formalises the shared regional priorities and sits as an overarching document. Following the signing of an MoU, the Business Plan will be developed and finalised, bringing together strategic priorities from across local authority areas. These outcomes include:

- Maximise the quality, pace, and number of new homes in the West Midlands through the creation and maintenance of a robust pipeline of opportunities for new homes
- Promote and stimulate quality placemaking, inclusive economic growth, and levelling up in the West Midlands
- Enhance the environment and reduce carbon emissions to net zero
- Improve and develop the WMCA area's infrastructure, including transportation, utilities, public spaces, and amenities
- Develop the West Midlands Affordable Homes Strategy, formulate the Affordable Housing Programme in the West Midlands, and maximise the delivery of

affordable homes through jointly funded delivery models and projects that meet the housing needs of West Midlands residents

- Use the leverage of the partnership to bring in additional investment (public and private) and other skills and expertise
- Work together to influence the regional and national policy agenda (within organisational remits) and utilising existing policies to deliver regeneration that meets the local need and priorities for the West Midlands
- Engage communities, businesses, and organizations in activities and initiatives that improve the quality of life for all stakeholders.

5.0 SPP Deeper Devolution Priorities

5.1 The SPP will enhance various elements of the region's devolution programme, bringing together expertise, resources and existing funding streams from WMCA and Homes England to unlock strategically important regeneration in partnership with local authorities, Registered Providers and the private sector. This includes:

- Joining-up available funds to create a more flexible and innovative regime to maximise outcomes for local people.
- Ensuring housing schemes consistently meet their potential in delivering genuinely affordable homes at pace, bringing together knowledge, funding and resources from across partners.
- Coordinating investment into Levelling Up Zones by working closely with private and public sector partners to deliver a joint pipeline that meets the needs of communities.
- Utilising the WMCA Land Reform Programme to work with local authorities to tackle land ownership issues, exploring the possibility of acquiring and disposing of land to unlock key sites for delivery.

6.0 Homes England RDEL Funding Opportunity

6.1 After the successful use of the RDEL funding during 2022-23, Homes England have been awarded an additional £400,000 to the West Midlands to be spent this financial year (2023-24).

6.2 This revenue funding will be used to accelerate priority housing-led projects across the WMCA area, supporting a number of individual commissions to fund activity such as technical due diligence, research, legal and planning documents or to support land assembly.

6.3 Local Authority partners were invited to submit an Expression of Interest (EoI) form for their priority projects, detailing their alignment with funding criteria and the strategic outcomes unlocked by this investment. These have been received by Homes England and are being evaluated and shortlisted using the criteria outlined in Appendix A. Local authorities will be notified of the outcome for their projects throughout October and November 2023.

6.4 Homes England will place those projects that are not allocated any RDEL funding for this financial year into a pipeline for consideration if future funding is secured for the region.

7.0 Next Steps

7.1 To progress the development of the SPP and in preparation for the formal signing of an MoU, the following steps will be followed by WMCA and Homes England:

- Continuing engagement and collaboration with local authorities throughout the programme of works and using Housing & Land Delivery Steering Group (September and December) and Housing & Land Delivery Board (October) to formally update members.
- WMCA and Homes England will review the draft MoU and agree final documentation.
- Continue Business Plan development alongside the finalisation of the MoU, bringing together the detail of the partnership strategy and intended outcomes.
- Build a Project Pipeline with support from local authorities to develop a longer-term strategy and priority areas for joint working.

7.2 Next steps for progressing the RDEL funding:

- Review RDEL EoI applications and notify local authorities of their outcomes throughout October and November 2023.
- RDEL funding spend deadline is 15th March 2024.

8.0 Legal Implications

Strategic Place Partnership

8.1 WMCA has the power to enter into a non-legally binding memorandum of understanding with Homes England under Section 113(1)(a) of the Local Democracy, Economic Development and Construction Act 2009. This statute gives WMCA a power of competence appropriate for the purposes of carrying out any of its functions.

RDEL Funding

8.2 WMCA has the power to accept grant funding from Homes England under Section 113(1)(a) of the Local Democracy, Economic Development and Construction Act 2009. This statute gives WMCA a power of competence appropriate for the purposes of carrying out any of its functions.

8.3 WMCA has the power to give grants to local authority partners for the purpose of accelerating housing-led projects under Section 113(1)(a) of the Local Democracy, Economic Development and construction Act 2009. This statute

gives WMCA a power of competence appropriate for the purpose of carrying out any of its functions.

- 8.4 Both the acceptance of the grant funding and the making of awards of funding and the appointment and the entering into of the memorandum of understanding will be made as part of the WMCA strategy under both its economic development and regeneration function and its housing land and infrastructure function to principally promote and further the achievement/fulfilment of the following key WMCA objectives within the West Midlands Region.

9.0 Financial Implications

- 9.1 It is noted that the purpose of this report is to provide an update on progress made on the West Midlands SPP and the proposed next steps to formally launch the SPP with Homes England.
- 9.2 The report, also, advises on the additional £400k Homes England R-DEL funding available for Local Authorities, to accelerate priority housing-led projects across the WMCA area, and to be spent in the 2023-24 Financial Year.
- 9.3 Work to be undertaken to agree the Business Plan; to build a Project Pipeline; and related activities as noted within this report will be funded from existing resources. Any further Financial Implications will be brought to a future H&LDB Meeting.

10.0 Equalities Implications

- 10.1 Both Parties are committed to discharging the public sector equality duty in their decision making under the SPP.

11.0 Inclusive Growth Implications

- 11.1 Homes England and WMCA both aim to achieve levels of affordable housing to ensure that the development around the West Midlands is accessible for all to benefit from.

12.0 Geographical Area of Report's Implications

- 12.1 This work is focused on the whole West Midlands Combined Authority area.

Appendix A – RDEL EOI Form

Homes England is making available revenue funding to support housing and housing-led, mixed-use regeneration schemes in the West Midlands Combined Authority (WMCA) area¹. During 2023/24, revenue funding totalling up to £400,000 is being provided.

Local Authorities in the WMCA area are eligible to apply for revenue funding support (indicatively, this is expected to be between £50,000 - £70,000 per project) for projects that contribute to the following strategic outcomes:

- maximise the quality, pace, and number of new homes in the West Midlands through the creation and maintenance of a robust pipeline of opportunities for new homes
- promote and stimulate quality placemaking, inclusive economic growth, and levelling up in the West Midlands
- enhance the environment and reduce carbon emissions to net zero
- improve and develop the WMCA area's infrastructure, including transportation, utilities, public spaces, and amenities
- develop the West Midlands Affordable Homes Strategy, re-align the Affordable Housing Programme in the West Midlands, and maximise the delivery of affordable homes through jointly funded delivery models and projects that meet housing demands of the region

If you have any queries, please contact [Name, email address]

Please send your completed forms to [Email address]

1. Applicant Details	
Local Authority	
Name of Local Authority key Contact	
Email	
2. Project Details	
Project Name	
Site Address	
Postcode	
What are the indicative outputs associated with this project? <i>(i.e., number of units, commercial floor space, land remediated)</i>	
What is the indicative value of this revenue funding bid? <i>The indicative value for bids is between £50,000 and £70,000. Projects requiring a larger contribution need to be of a demonstrable strategic nature. Projects requiring a smaller contribution will be considered but will need to demonstrate exceptional</i>	

¹ Note: this includes constituent and non-constituent local authority districts

<i>strategic fit and deliverability.</i>	
3. Rationale	
<p>Please outline the type of activity funding is sought for.</p> <p><i>All works funded must actively contribute to the preparation of, and evidence base for, a HMT-style Green Book business case including:</i></p> <ul style="list-style-type: none"> • <i>economic case (value for money, benefit cost ratio (BCR), additionality)</i> • <i>commercial case (procurement and legal structures)</i> • <i>financial case (financial modelling)</i> • <i>management case</i> • <i>technical due diligence (specialist surveys)</i> 	
<p>Please outline how this project meets the strategic outcomes for RDEL Funding</p> <p><i>Maximum 250 words</i> <i>Further details provided in Annex 1</i></p>	
Does this project represent the strategic priorities of your LA?	
4. Financing Details	
Can the RDEL funding be spent by 15 March 2024?	
Please outline how the estimated profile of funding expenditure is within the 15 March 2024 envelope.	
Are you able to accept any funding by Grant Funding Agreement (GFA) unless in extraordinary circumstances?	
Please briefly outline any approvals processes that will be needed to accept any funding via GFA.	
If no, what the extraordinary circumstances preventing this?	

Annex One – Strategic Objectives of the Strategic Place Partnership (SPP)

- Maximise the quality, pace and number of new, sustainable homes and communities in the West Midlands
- Deploy both Homes England and WMCA owned land and investment to deliver new homes and key policy objectives for the region
- Maximise the supply of affordable homes through jointly funded delivery models and projects that deliver housing for West Midlands residents
- Develop and maintain a robust database of opportunities for new homes
- Deliver an infrastructure led approach to place making
- Work together to bring the priority sites forward for development, finding solutions to remove barriers where the market will not
- Explore new investment and delivery models
- Collaborate with other public land owners, Local Authorities and stakeholders to achieve the Strategic Outcomes
- Maximise the strengths and skill sets of each Party to combine and strengthen delivery capacity
- Use the leverage of the partnership to bring in investment (public and private) and other skills and expertise;
- Work together to influence the regional and national policy agenda and utilising existing policies to deliver regeneration that meets the local need and priorities for the West Midlands

Appendix B – RDEL Funding Criteria

EOI - Scoring Criteria

1. Can the RDEL funding be spent by 15 March 2024?	<i>Yes (1)</i> <i>No (0)</i>
2. If yes, please outline the procurement or commissioning status of the proposed activity, outlining the status of the professional services contract or procurement route where a third-party provider is being used.	
3. Please outline the added value of this RDEL funding, where receipt of this funding will be supplementing existing budgets, will this enable your organisation to redirect revenue funding to another pipeline project?	<i>Demonstrable added value evidenced (3)</i> <i>Some added value evidenced (2)</i> <i>No added value evidenced (1)</i>
4. Are you able to accept any funding by Grant Funding Agreement (GFA) unless in extraordinary circumstances?	<i>Yes (1)</i> <i>No (0)</i>
5. Please briefly outline any approvals processes that will be needed to accept any funding via GFA.	<i>Funding approvals are straightforward e.g. a nominated officer can accept GFAs on behalf of the authority (3)</i> <i>Funding approvals may be delayed e.g. an officer needs the approval of a more senior officer (2)</i> <i>Funding approvals are complex e.g. requires Cabinet or Senior Leadership team sign off with board papers etc. (1)</i>
6. If no, what the extraordinary circumstances preventing this?	<i>If no at question 2, where extraordinary circumstances outlined are permissible, the score will be 1.</i>
7. Please outline the type of activity funding is sought for. All works funded must actively contribute to the preparation of, and evidence base for, a HMT Green Book business case including: <ul style="list-style-type: none"> • economic case (value for money, BCR, additionality) • commercial case (procurement and legal structures) • financial case (financial modelling) • management case 	<i>Work proposed is straightforward and low risk (3)</i> <i>Work proposed is challenging and medium risk (2)</i> <i>Work proposed is complex and high risk (1)</i>

<ul style="list-style-type: none"> technical due diligence (specialist surveys) 															
<p>8. What are the indicative outputs associated with the project i.e. number of units, commercial floor space, land remediated.</p>	<p><i>As this is a 'blind' exercise (e.g. we have no indication of the type and scale of the projects that may come forward), this question will be assessed holistically by the panel with a presumption that the higher the number of units, commercial floor space and land remediated will result in a higher score.</i></p> <p><i>This will be balanced with considerations as part of question 7 so as not to exclude smaller, catalytic sites from the process.</i></p>														
<p>9. Please outline how this project meets the stated strategic objectives of the Strategic Place Partnership (included at annex one) [250 words max].</p>	<p><i>As this is a qualitative question, each submission will be assessed using the strategic objectives. Those showing exceptional adherence to the objectives will score a 5, those showing no relation to the strategic objective will score a 1, with a sliding scale of relationality between them.</i></p>														
<p>10. The indicative value for bids is between £50,000 and £70,000. Projects requiring a larger contribution need to be of a demonstrable strategic nature to the WMCA. Projects requiring a smaller contribution will be considered but will need to demonstrate exceptional strategic fit and deliverability.</p> <p>What is the indicative value of the bid?</p>	<table border="1" data-bbox="799 1048 1369 1305"> <tr> <td><i>£90,000 and over</i></td> <td><i>Red (1)</i></td> </tr> <tr> <td><i>£80,000</i></td> <td><i>Amber (2)</i></td> </tr> <tr> <td><i>£70,000</i></td> <td><i>Green (3)</i></td> </tr> <tr> <td><i>£60,000</i></td> <td><i>Green (3)</i></td> </tr> <tr> <td><i>£50,000</i></td> <td><i>Green (3)</i></td> </tr> <tr> <td><i>£40,000</i></td> <td><i>Amber (2)</i></td> </tr> <tr> <td><i>£30,000 and under</i></td> <td><i>Red (1)</i></td> </tr> </table>	<i>£90,000 and over</i>	<i>Red (1)</i>	<i>£80,000</i>	<i>Amber (2)</i>	<i>£70,000</i>	<i>Green (3)</i>	<i>£60,000</i>	<i>Green (3)</i>	<i>£50,000</i>	<i>Green (3)</i>	<i>£40,000</i>	<i>Amber (2)</i>	<i>£30,000 and under</i>	<i>Red (1)</i>
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<i>£40,000</i>	<i>Amber (2)</i>														
<i>£30,000 and under</i>	<i>Red (1)</i>														
<p>11. Please outline how the estimated profile of funding expenditure is within the 15 March 2024 envelope.</p>	<p><i>Low risk (3)</i> <i>Medium risk (2)</i> <i>High risk (1)</i></p>														
<p>12. Do the sites identified represent the strategic priorities of your LA?</p> <p><i>Where possible please include a Cabinet resolution, adopted plan, approved strategy, masterplan etc.</i></p>	<p><i>Yes, good evidence provided (1)</i> <i>No, no evidence provided (0)</i></p>														



Housing and Land Delivery Board

Date	18 October 2023
Report title	Affordable Homes Programme and Supply Strategy Update
Portfolio Lead	Councillor Ian Courts
Accountable Employee	<p>John Godfrey, Interim Executive Director of Housing Property & Regeneration, West Midlands Combined Authority Email: John.Godfrey@wmca.org.uk</p> <p>Rob Lamond, Head of Strategy & Analysis, West Midlands Combined Authority Email: Rob.Lamond@wmca.org.uk</p>

Recommendation(s) for action or decision:

The Housing and Land Delivery Board is recommended to:

- A) Note** the progress following the announcement of the Deeper Devolution Deal in March 2023, specifically on the joint working of the Homes England and WMCA teams relating to the Affordable Homes Programme, and the emerging Affordable Homes Supply Strategy.
- B) Note** that ongoing engagement with local authorities and other partners is ongoing, and that DSG members are encouraged to contribute to this and provide links where necessary into relevant stakeholders

1.0 Purpose

- 1.1 The purpose of this report is to update the committee on the trailblazer approach to delivering the Affordable Homes Programme in the West Midlands, as set out in the Deeper Devolution Deal agreed by WMCA and HM Government in March 2023.

2.0 Background

- 2.1 Within the Deeper Devolution Deal (DDD), government committed to piloting a new, two-phase trailblazer approach to the Affordable Homes Programme (AHP) in the West Midlands. The AHP is the government's flagship programme for delivering affordable housing in England, providing grant funding towards the supply of new social and affordable housing.
- 2.2 The first and current phase of the pilot relates to funding within the existing envelope of the AHP and will run to the end of the in-train programme (2021-26). The second phase will begin in any successor programme, to be agreed in the next Spending Review.
- 2.3 Over the two phases, WMCA and its local authority partners will be given increasing oversight, involvement, direction and, in the second phase, decision-making on affordable housing delivery in the region for the first time, whilst also ensuring the business case objectives and commitments of the in-train national programme are delivered and existing local authority arrangements are maintained.
- 2.4 Additionally, HM Government has committed to establishing a new wide-ranging Strategic Place Partnership, through Homes England, to support the region with ambitious plans on housing supply, investment, and urban regeneration. Homes England will work with WMCA and its constituent local authorities to agree a set of place-making outcomes, focused on delivering transformational change across the West Midlands. This is the subject of another report on today's agenda.

3.0 Phase 1 – Current Affordable Homes Programme (2023-26)

- 3.1 In the first phase, WMCA will be “responsible for setting the strategic direction, leadership and strategy of the Affordable Homes Programme, priorities for investment and strategic oversight within the WMCA area”, working closely with Homes England, who will “lead on day-to-day management, monitoring, grant allocation and administration of the Affordable Homes Programme in the region”.
- 3.2 **To help WMCA meet its ambition of working with local authorities, HM Government, housing associations and industry to double the supply of affordable homes in the West Midlands**, Homes England will invest at least £200 million of Affordable Homes Programme funding within the WMCA area by March 2026 with a clear ambition for WMCA, local partners and Homes England to work together to invest up to £400 million to build more social and affordable homes by 2026. Overall funding decisions will need to be aligned and consistent with the national targets set for the current AHP, but more flexibility may be granted to take greater account of regional priorities in line with the trailblazer approach.

- 3.3 This will be dependent on appetite from providers, alongside the ongoing work to develop a joint pipeline and delivery plan, developed as part of the Strategic Place Partnership. To support this ambition, WMCA is working collaboratively with Homes England, local authorities and local delivery partners to identify opportunities to deploy both AHP and WMCA's existing devolved Housing and Land funding to maximise delivery of new affordable and other homes, mixed use development and estate regeneration opportunities.
- 3.4 It is important to note that the current AHP programme application processes are unchanged, with Homes England processing and approving schemes through existing channels.
- 3.5 In June 2023, new flexibilities were announced for the AHP, allowing for AHP grant to also be used to fund replacement homes alongside new affordable homes as part of **wider estate regeneration plans**. This represents a significant opportunity for the West Midlands trailblazer approach to unlock long-standing estate renewal schemes and the joint team is working with local authorities and affordable housing providers to develop a pipeline of estate regeneration projects which could be unlocked or accelerated through a joined-up funding approach.

4.0 Phase 2 – Successor Programme (2026 onwards)

- 4.1 Post 2026, WMCA, in partnership with its local authorities, will “make the key strategic decisions over local investment and spend” of Affordable Homes Programme in the WMCA area in line with its strategic framework. In this new ‘trailblazing’ model of delivery, WMCA will be responsible for adopting a strategic role on affordable housing, including some decisions currently taken by Homes England, such as agreeing sites and providers and identifying standards.
- 4.2 WMCA will be held accountable for delivery through a new accountability framework. Day to day administration of the Affordable Homes Programme in the West Midlands will continue to be undertaken by Homes England working to the strategy, objectives and framework set by WMCA, with Homes England reporting to WMCA on delivery of the agreed outcomes and outputs.

5.0 Implementation of the Trailblazer Approach

- 5.1 A joint West Midlands AHP team, comprising officers from WMCA's Housing, Property & Regeneration team and Homes England's Growth team, has been formed to establish the operational, administrative, legal, governance and other requirements of the programme. Together, the joint team are meeting with regional partners and stakeholders, including local authorities, affordable housing providers and other developers. This ongoing engagement programme is focusing initially on the objectives, requirements and implementation of the first phase of the trailblazer approach.
- 5.2 As part of this engagement, the team are working with local authorities and affordable housing providers to identify local priority sites and early wins for the joint pipeline and delivery plan. To further augment this pipeline, opportunities to drive additional affordable housing are also being explored. These include identification of schemes not currently meeting Local Plan affordable targets, engaging wider providers/landholders of affordable housing (for example, the Almshouse Association and Church of England) and engaging providers with a significant footprint in the sector who are not yet active or delivering at scale in the region.

5.3 The key principles which will underpin our approach to developing this strategy are:

- WMCA working with Homes England, local authorities and other partners to ensure the supply of affordable homes meets local demand and need in terms of cost (property and running costs including fuel), tenure, quality, location, type and size
- Incorporate and align with WMCA and local authority strategies, policies, charters and frameworks including those related to net zero, brownfield first and digital connectivity
- Assessing the current challenges and barriers affecting affordable housing delivery, and exploring innovative options and solutions through a place based approach
- Working collaboratively across the affordable housing system to inform and influence the devolved Affordable Homes Programme post-2026
- WMCA acting in its capacity as a facilitator, enabler, co-investor, researcher and innovator to deliver more affordable homes for the region.

5.4 The success of the Strategy will depend on the WMCA continuing to prioritise close and effective partnership working with:

- Local authorities – who lead locally, and Arms Length Management Organisations (ALMOs)
- Homes England – national lead and key funder of Affordable Housing in England
- Housing Associations – delivery partners with strategic links through the West Midlands Housing Association Partnership and the National Housing Federation
- For-profit Registered Providers – including Strategic Partners
- Other providers/organisations – working with potential partners including the Almshouse Association, Community Land Trusts, housing co-operatives, Shelter, the WMCA Homelessness Taskforce and others where WMCA can add regional value
- Developers – including through WMCA funded schemes and Section 106 requirements
- HM Government – to influence policy and resource allocation

6.0 Next steps

6.1 The ongoing, comprehensive joint engagement programme with local partners and wider sector stakeholders will continue. The joint West Midlands AHP team will continue working closely to identify priority sites throughout this engagement and in their respective existing pipelines to establish the joint delivery plan and priority delivery.

6.2 Concurrently, officers will work to develop robust monitoring and reporting processes and systems which can provide the necessary oversight and assurance of performance for WMCA Boards for the trailblazer AHP programme.

6.3 From September work is being commissioned to develop the strategy, in order to:

- Take forward the work, with partners, to co-develop an Affordable Homes Supply Strategy for endorsement in draft and final form
- Form a dedicated officer working group with representatives from local authorities, Homes England and sector groups to inform the thinking and delivery of the strategy
- Engage key industry bodies and representatives, including the WMCA Homelessness Taskforce and others, to assess and grip the latest research and ideas across the sector to shape the strategy

- Continue to engage in discussions with WMCA strategic partners to secure commitments to and views on the emerging strategy
- Monitor and evaluate the effectiveness of the Strategy against delivery on the ground.
- Ensure strategic links and connections between organisations, departments and service areas are maximised through the lens of affordability in its widest sense

7.0 Financial Implications

- 7.1 It is noted that the purpose of this report is to update the Committee on the approach to delivering the Affordable Homes Programme, following on from the Deeper Devolution Deal.
- 7.2 It is understood that, in the first phase of the Programme, the WMCA will be responsible for the Strategy and Homes England will be responsible for the day-to-day management, monitoring, administration and grant allocation. In the second phase, WMCA's role in this will expand and will include accountability for delivery, while day-to-day administration will remain with Homes England.
- 7.3 It is understood there is no further revenue funding allocated for WMCA to carry out these activities and this work will be undertaken from within the existing resources.
- 7.4 As the role of WMCA in this develops, there is likely to be a need for revenue funding, and this will be considered at the appropriate time. Therefore, there may be, in future, financial implications arising and any such decisions would be subject to WMCA's approved governance and assurance processes.
- 7.5 There are no direct financial implications arising from the Affordable Homes Supply Strategy. As noted in the report, progress is underway on the development of the Strategy and this activity will be undertaken from within the existing resources. There may be, in future, financial implications arising from decisions to progress projects in delivering against the Strategy but any such decisions would be subject to WMCA's approved governance and assurance processes.
- 7.6 Any WMCA investment into affordable homes delivery would be governed and administered through the WMCA Single Assurance Framework and in line with the accounting and taxation policies of the WMCA and HMRC.

8.0 Legal Implications

- 8.1 Under section 113A of the Local Democracy, Economic Development and Construction Act 2009 WMCA has the power to do anything which it considers appropriate for the carrying out of its functions and anything it considers to be appropriate for purposes incidental to its functions.
- 8.2 Article 10 of the West Midlands Combined Authority Order 2016 confers the functions of the constituent councils set out in Schedule 3 on the WMCA in relation to its area and these include the functions of the constituent councils under section 1 of the Localism Act 2011 to the extent that those functions are exercisable for the purpose of economic development and regeneration. This means that WMCA may do anything which it considers appropriate for the purposes of economic development or regeneration of the combined authority area.

- 8.3 Article 10 of the West Midlands Combined Authority (Functions and Amendment) Order 2017 WMCA confers Homes England's land and infrastructure function upon WMCA in relation to WMCA's area. WMCA can exercise these functions for the purposes of or incidental to the following objects:
10 (1) (a) to improve the supply and quality of housing in the combined area
10 (1) (b) to secure the regeneration or development of land or infrastructure in the combined area
10(1) (c) to support in other ways the creation, regeneration or development of communities in the combined area or their continued well-being and
10(1) (d) to contribute to the achievement of sustainable development and good design in the combined area
- 8.4 WMCA will need to consider the legal and governance requirements of each phase of the Affordable Homes Programme and put into place the necessary processes and systems to provide the necessary assurances for the work undertaken. Legal advice to be sought as and when required.
- 8.5 It is noted that the purpose of this report is to update Delivery Steering Group on the emerging Affordable Homes Supply Strategy and that the indicative content is to be co-developed with various partners including Homes England and local authorities and housing associations. WMCA will also engage with key industry bodies and representatives, including the WMCA Homelessness Taskforce and strategic partners to shape the strategy.
- 8.6 Legal advice should be sought at appropriate stages in the development and implementation of the Affordable Homes Supply Strategy to ensure compliance with governance and legal requirements and the necessary assurance frameworks.

9.0 Equalities Implications

- 9.1 There are no immediate equalities implications in relation to this report. However, the delivery plan and individual delivery schemes will need to take into account local area needs and local stakeholder needs to ensure identified opportunities benefit local residents, including harder to reach groups. To that effect equality impact assessments will need to be conducted to understand demographics, key inequality issues and how investment can help address key inequality gaps. Engagement and consultation with key equality stakeholders is also crucial.

10.0 Inclusive Growth Implications

- 10.1 The trailblazer approach provides WMCA with greater strategic oversight and influence on delivery of the AHP in the region. Alignment with WMCA policy and strategy focused on maximising economic benefits, housing quality, zero carbon and advanced manufacture, and creation of new job/skills opportunities across the region's communities will be central to the joint delivery plan.

11.0 Geographical Area of Report's Implications

- 11.1 The recommendations of this report apply to the whole of WMCA's geographical area.

12.0 Other implications

- 12.1 None.

13.0. Schedule of Background Papers

13.1 None.

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**West Midlands
Combined Authority**

Housing & Land Delivery Board

Date	18 October 2023
Report title	Homes for the Future: Draft Strategy
Portfolio Lead	Councillor Ian Courts
Accountable Employees	<p>John Godfrey, Interim Executive Director of Housing, Property & Regeneration, West Midlands Combined Authority Email: John.Godfrey@wmca.org.uk</p> <p>Leo Pollak, Interim Head of Policy, West Midlands Combined Authority Email: Leo.Pollak@wmca.org.uk</p> <p>Mia Higgins, Programme Support Officer, Housing, Property & Regeneration, West Midlands Combined Authority Email: Mia.Higgins@wmca.org.uk</p>
Report has been considered by	<ul style="list-style-type: none"> • March, September, November and December 2022; and May, June and September 2023 - Housing & Land Delivery Steering Group • April, October and November 2022; and January and April 2023 - Housing & Land Delivery Board

Recommendation(s) for action or decision:

The Housing & Land Delivery Board is asked to:

- Note progress with** the work to date to develop the **Homes for the Future** programme for **the West Midlands**, and wide-ranging input from the Future Homes Taskforce and local authority partners across the region, among other relevant stakeholders;
- Discuss and comment** on the final draft of the Homes for the Future strategy (attached as Annex 1);

- c) **Discuss and comment** on the amendments to the report on costs attached as Annex 2 prepared by Cast Consultancy and amended in accordance with Delivery Steering Group's previous request for amendments; and
- d) **Note the progress, discuss and comment** on the work to date on the Homes for the Future Comms Strategy and Implementation Plan, including plans for the Homes for the Future launch.

1.0 Purpose

1.1 The purpose of this report is to:

- summarise the work that has been undertaken under the leadership of the Housing and Land Board on Homes for the Future
- invite any final comments on the content of the strategy document from Delivery Board; and
- summarise the work to date on the Homes for the Future Implementation Plan and Comms Strategy, including the launch event

2.0 Background

2.1 **In April 2022, Housing & Land Delivery Board agreed a programme of work to develop a ‘Homes for the Future Strategy’ in 2022/23.** The scope being to produce a coherent strategy to accelerate the development of the Future Homes Cluster in the Plan for Growth, secure delivery and investment in Advanced Manufacturing in Construction (AMC); zero carbon homes (ZCH); get the region ready for the roll-out of changes to Building Regulations (Part L) set out in the Government’s emerging Future Homes Standard; and consequential reduced occupier costs in the new homes.

2.2 **WMCA’s Homes for the Future builds on the work already pioneered to date around AMC and ZCH** under Housing & Land Delivery Board.

This new integrated strategy is a **cross-cutting document** that is directly linked to a range of regional policies and programmes:

- unlocking the potential of the ‘*Manufacture of Future Housing*’ economic cluster in the West Midlands Plan for Growth (launched July 2022);
- the West Midlands brownfield housing and regeneration programme (launched in the 2018 Housing Deal)
- WM2041
- Investment and Levelling Up Zones (March 2023 Devolution Deal)
- The Affordable Housing Programme (March 2023 Devolution Deal)
- The Public Land Programme (March 2023 Devolution Deal)
- the investment opportunity in future homes set out in the West Midlands Investment Prospectus (launched May 2023); and
- the high-level deliverables of the Housing & Land Portfolio agreed by WMCA Board in February 2023.

2.3 Housing & Land Delivery Board has previously been updated on the process to develop Homes for the Future including the appointment of Cast Consultancy; the establishment of a Future Homes Taskforce with membership drawn from across the construction and residential development industry; the launch of research projects to create an evidence base to underpin the new strategy; and the detail of a Technical Standard appropriate for the West Midlands.

2.4 **This work has been brought together in the form of a Homes for the Future strategy document – a final draft of which can be found under Appendix 1.** In addition, a report on the potential cost implication of complying with the standard can be found under Appendix 2 with the alterations requested previously by Delivering Steering Group.

2.5 **Homes for the Future has been developed with the oversight of the Future Homes Taskforce.** The Taskforce last met on 9th October 2023 where members expressed strong support for the programme of work and stressed the importance of showcasing industry support and early wins through landing a successful comms strategy and continuing work post-publication in the form of a wide-reaching Implementation Plan. The Taskforce will meet again in November, prior to publication of the strategy, and will continue to be involved, not least through providing comments on the final strategy before its publication, endorsement and support of the strategy through promotion of WMCA's comms programme, and support in implementing the standard and continuing momentum on the programme after the strategy document is published. The taskforce is currently being asked to consider its role moving forward and how it can support with the Homes for the Future Implementation Plan.

3.0 Cost implications

3.1 At the request of Delivery Steering Group and Housing & Land Delivery Board, Cast Consultancy were commissioned to research the potential cost implications of the proposed Technical Standard which is embedded in Homes for the Future. Their draft report is attached as Annex 2 for discussion and comment.

3.2 Cast has undertaken a review of the potential cost impact of the emerging Homes for the Future Technical Standard for mid-terrace and flat typologies, and as a result of request for further information have now extended this to detached dwellings. Their methodology includes a number of assumptions, many of which are susceptible to change over time, particularly as the industry adopts, and adapts to, new standards:

- Their baseline of each typology is based on a 'typical' approach. The modelling then considers the potential evolution of the construction costs based on proposed standards for 2023, 2025 and 2030 including considering the likely methodology that would be adopted to meet the standard (based on current-day costs).
- They also consider the changes that would be required to achieve the forthcoming Future Homes Standard 2025, which central Government has recently consulted on. They have sought to distinguish between the costs that would be incurred in achieving the WMCA standards and those that developers will need to prepare for regardless of the WMCA strategy.
- The approach to meeting the WMCA standard is based on a hypothetical scenario and includes assumptions around changing to a timber panelised approach for the mid terrace property, potential foundation savings for light structure, and an allowance for changes to mechanical, electrical and plumbing (MEP) solutions.
- The cost impact has been based on assumptions around the likely cost from experience, however, is not measured from a detailed design assessment of a specific scheme.
- A series of assumptions around the likely cost impact of the technical standards are considered. There are clearly a variety of different approaches that could be adopted; therefore, a cost range has been included to accommodate the variation between different schemes in terms of site, context, scale etc.
- The cost assessment is presented on a £/sq ft basis. For the flat typology this has been derived from taking a typical 8 storey flat block as a baseline to assist in establishing the impact on the % cost impact of the proposed standard.

3.3 The findings of the research are set out in the draft report and may be summarised as:

- Construction labour shortfalls are very likely to increase the baseline cost of construction whereas the WMCA approach which incentivises a shift to different construction approaches, using MMC, a different workforce model and less site labour reliance will be less affected by this trend
- It is highly likely that the supply chain will adjust and become more efficient. By moving ahead of regulation, WMCA will stimulate the market to evolve sooner
- It is highly likely that regulation will continue to get stronger and will mirror the approach WMCA is taking now by introducing embodied carbon reduction targets
- Cost implications of the WMCA standard reduce to between £0 and £2,000 per new home in future scenarios
- WMCA would also signal change sooner to the supply chain, giving regional suppliers an early mover advantage in preparing for future national change.

3.4 At the request of Delivery Steering Group, an additional section, exploring the cost to detached properties, has been added to the report. This builds upon the cost analysis of flats and terraced houses.

4.0 Comms Strategy

4.1 Prior to the publication of Homes for the Future, WMCA is developing a comprehensive comms strategy to build momentum behind the strategy. Through the use of infographics comparing a traditional build and a build under our new standard, we will profile the benefits of aligning with the standard such as the increase in energy efficiency, reduction in average energy bills, and reduction in construction waste, among others. This will support the key tenets of the strategy, as well as communicating three key benefits for residents, developers and the West Midlands; social, economic, and environmental.

4.2 Central to communicating these messages will be engagement with residents. We will be using feedback from residents who are living or who have lived in homes that either meet the Homes for the Future standard, meet some aspects of the standard or are heading in the direction of meeting the standard. WMCA is currently developing a social media package to ensure effective delivery of these messages.

4.3 Housing Associations and developers will also contribute to the comms programme through endorsement of the strategy and the provision of quotes in support of Homes for the Future. In addition, WMCA will be requesting endorsement for the strategy and further quotes from Future Homes Taskforce members' respective organisations.

4.4 As part of our communications, we are seeking to profile additional sites to those already referenced in the strategy document. With permission of relevant party, we will profile sites throughout the West Midlands as part of our comms strategy to demonstrate proof of concept and delivery.

4.5 A suitable launch venue has now been secured in the form of the National Brownfield Institute where a state of the art immersive 360° room will allow the vision for Homes for the Future to be communicated in an engaging and immersive way. We are also exploring the options of visiting exemplar sites prior to the launch with regional news operators to speak with residents who have benefitted from homes which have embraced Homes for the Future principles. Exact details are currently being worked up and an invite list being prepared. The comms programme will continue however after

the launch of the strategy, in order to profile the success of the strategy and respective sites that adhere to it.

5.0 Implementation Plan

- 5.1 Through the Homes for the Future Implementation Plan, WMCA will ensure that the programme does not end with publication of the strategy. It is recognised that developers will need support with understanding the standard, sourcing the appropriate manufacturers, understanding how to apply for WMCA funding more widely, and accessing support from WMCA should they require it. This will be particularly important for SMEs and smaller developers.
- 5.2 Additionally, the expanding the skills base that can deliver Homes for the Future will be a key programme of work for WMCA. In order to enable the supply chain to develop, WMCA has the potential to offer support for skills development in relation to Homes for the Future. WMCA has discussed the potential of facilitating a forum upon which relevant WMCA colleagues could engage with key stakeholders to understand where support to develop skills in relation to Homes for the Future is needed, as well as bringing together relevant stakeholders to advance knowledge and research in this field, share best practice, and make meaningful connections with others in the field.

6.0 Next steps

- 6.1 Comments on the final draft strategy and costs report are invited at the meeting. This will be last opportunity for members to comment on the content of the strategy document prior to its publication.
- 6.2 An extensive engagement programme has taken take place over the summer months to ensure co-development of the document and engagement in the process. There will also be further input from the Future Homes Taskforce and industry representatives and alignment with activities related to WMCA's Plan for Growth, Deeper Devolution Deal outcomes and funding streams. Engagement will continue after publication to build a knowledge base around Homes for the Future, support best practice, and learn from real-world Homes for the Future.
- 6.3 An extensive comms programme is currently being worked up and will continue to progress even after publication of the strategy. Updates as to its progress will be brought to future meetings of Housing & Land Delivery Board.
- 6.4 The Implementation Plan will be fleshed out to support delivery of Homes for the Future after publication of the strategy. This will be achieved through working with developers of all sizes to support their understanding and implementation of the strategy, and expanding the skills base that can deliver Homes for the Future.
- 6.5 This final version of the strategy, one which has secured full support through the engagement process and received final comments from Delivery Steering Group, will be taken to Housing & Land Delivery Board for final endorsement in October 2023. Consideration is currently being given to a formal launch in late November/early December.

7.0 Financial Implications

- 7.1 It is noted that the purpose of this report is:
- to update the Delivery Steering Group on progress in developing a Homes for the Future strategy ('the Strategy'); a technical standard aligned with the Single

Commissioning Framework; and supporting guidance documentation for investors and developers; and

- to present the findings of research undertaken on the cost implications of the Strategy, which are noted in the Technical Standard Initial Cost Appraisal from Cast Consultancy, along with the underlying assumptions used.

7.2 Progress is underway on the development of the Strategy and this activity will be undertaken from within the existing resources. Further details on the progress of the Strategy, including emerging financial implications, will be reported to future Housing & Land Delivery Steering Group and to the Housing & Land Delivery Board before onwards approval by the relevant Board.

8.0 Legal Implications

8.1 Section 113A(1)(a) of the Local Democracy, Economic Development and Construction Act 2009 gives WMCA a power of competence appropriate for the purposes of carrying-out any of its functions. Part 4 of The West Midlands Combined Authority Order 2016 (2016 No 653) confers that the functions relating to any economic development and regeneration in the constituent councils are exercisable by WMCA. Part 3 of The West Midlands Combined Authority (Functions and Amendment) Order 2017 confers functions corresponding to the functions of the Homes and Communities Agency has in relation to the combined area. Paragraph 10 (2) (a) of the 2017 Order confers the function of improving the supply and quality of housing to the Combined Authority, 10 (2) (b) to secure the regeneration or development of land or infrastructure in the combined area, 10 (2)(c) to support in other ways the creation, regeneration or development of communities in the combined area or their continued well-being and 10 (2)(d) confers the function of contributing to the achievement of sustainable development and good design.

8.2 It is noted that the purpose of this report is inter alia to provide a summary of the work to date on Homes for the Future and to invite comments on the typical costs associated with the implementation of the strategy. Although this paper does not create any direct legal implications, the implementation of the strategy is likely to involve industry wide changes that will have legal implications. Consequently, the relevant internal assurance frameworks will need to be strengthened to incorporate any related changes and to ensure consistency of implementation of the strategy in the delivery of schemes. Legal advice should be sought as when required.

9.0 Equalities Implications

9.1 There are no immediate equalities implications in relation to this report. However, individual strategies and delivery schemes will need to take into account local area needs and local stakeholder needs to ensure the schemes benefit local residents, including harder to reach groups. To that effect, equality impact assessments will need to be conducted to understand demographics, key inequality issues and how investment can help address key inequality gaps. Engagement and consultation with key equality stakeholders is also crucial. Long-term equalities benefits are likely to include warmer homes for residents, lower energy bills, and healthier properties.

10.0 Inclusive Growth Implications

10.1 Homes for the Future will be used to inform WMCA's approach to growing the AMC sector, zero carbon homes and new energy standards in an equitable way, maximising economic benefits, housing quality and job/skills opportunities across the region's communities.

10.2 Inclusive Growth benefits are expected to include supporting tackling fuel poverty, supporting the circular economy agenda, improving the climate resiliency of homes, supporting the goal of zero-waste construction, and health and well-being benefits.

11.0 Geographical Area of Report's Implications

11.1 The recommendations of this report apply to the whole of the WMCA area.

12.0 Other implications

12.1 None

13.0. Schedule of Background Papers

13.1 None

WMCA

Homes for the Future

Our Strategy for Aligning Zero Carbon Homes and Advanced Manufacturing

29th August 2023

Foreword by Andy Street

Our Homes for the Future Strategy brings together two distinct elements: *our clear ambition for building zero carbon homes* and *the region's proven capabilities in advanced manufacturing*. Using the latest digital technologies and innovations in construction, we aim to build more energy efficient, warmer, healthier, sustainable homes while creating brand new business, investment, and job opportunities.

We are determined to tackle the region's declared climate emergency and meet our commitment to be carbon neutral by 2041. With Homes for the Future, we have the opportunity to drive an increased supply of new homes, support existing businesses and create new ones, develop skills and improve the quality of new homes. By ensuring that our green ambition is embedded into all new construction projects from the start, we will be making our new homes liveable, sustainable, and resilient to the climate crisis.

This is a journey...a journey to ensure that the transition to zero carbon, climate resilient construction is achievable and accessible across the construction industry. I invite you to work with us and I promise that we will be there to support you every step of the way. There are huge advantages for us all.

Executive Summary

Nationally, the Government has set out a clear plan for challenging the construction industry to embrace the building of energy efficient, resilient, zero carbon homes through planned changes to Building Regulations in 2025 (the Government's *'Future Homes Standard'*). The Government is also incentivising new building techniques through requirements set out in major funding programmes such as the Affordable Housing Programme, now run in the West Midlands by WMCA and Homes England following the 2023 Devolution Deal.

As a result, many of the largest housebuilders and investors in the UK construction industry are implementing radical change to their models of building, incorporating advanced manufacturing techniques to drive efficiency, productivity and quality. But we need to ensure that this advantage is spread across all businesses, large and small.

In the West Midlands, we aim to get ahead of the curve in zero carbon and changes in regulations. The construction industry has one of the highest economic multipliers of all industrial sectors – nearly £3 value add for every £1 spent – and the opportunity for this strategy is to leverage these changes to ensure a 'fit for purpose' housebuilding industry in the West Midlands and a resilient supply chain that can weather the challenges that the housebuilding sector is facing.

Homes for the Future fundamental principles:

- **Aligning with emerging industry standards:** We have sought to align the strategy with what is already happening in the region and beyond on development projects, leading industry standards such as LETI (the Low Energy Transformation Initiative) and existing standard outcome metrics such as Pre-Manufactured Value (PMV). The PMV targets have been set in line with those of Homes England. Collectively, this will provide confidence to investors and developers (and Government) on clarity, certainty, case study evidence and delivery momentum.
- **Signalling a long-term ambition and direction:** The strategy and supporting Technical Standard set a clear, long-term ambition over the period to 2030, with incremental increases in requirements, enabling the construction industry to respond and invest over time, and as its capacity develops.

- **Securing pace and momentum:** Building on feedback from internal and external stakeholders, and key initiatives such as our Climate Emergency, Devolution Deal and Plan for Growth, the strategy sets a trajectory that exceeds Government regulation in both scope and speed of implementation.
- **Enabling realistic, flexible implementation:** Our strategy requires no one, single, technical solution. We emphasise a phased approach and compliance focused on the outcome rather than the process, allowing the sector to innovate. We also recognise the need to encourage behavioural change where we recognise that enhanced practical performance is not possible in the early years.
- **Suggesting practical solutions:** Delivery is critical, so we recognise the need to be practical. The Technical Standard sets out our expectations for performance over various timeframes. It also includes guidance on how the standard can be achieved in practice.
- **Identifying clear evidence of successful delivery:** To build momentum and show that it can be done, we will build a catalogue of successful projects that showcase success, and share the technical solutions used to create an environment of continuous improvement.

In terms of implementation, the strategy is also supported by the full policy and investment infrastructure of WMCA's new devolution settlement.

The strategy builds on its pioneering heritage by moving ahead of national Building Regulatory changes. At the same time, a phased incremental approach provides certainty and clarity to industry partners, with a planned transition over time ensuring that there is no negative impact on viability or deliverability. Finally, a performance-based approach adopted in the strategy, rather than a method or material prescriptive approach, will ensure that we are as inclusive as possible to all supply chains.0

We have carefully aligned our standard through industry engagement, led by our Future Homes Taskforce, and drawing upon our existing Route Map to Net Zero Homes. We recognise that, initially, the standard will require higher upfront investment, potentially some £10-£15k per dwelling. We are confident, however, that, as capability builds, national policy changes, economies of scale emerge in the use of new technologies, and the systemic

shortfalls in labour and skills drive increases in traditional construction costs, the initial cost increase of the region's technical standard will reduce, potentially to zero, by 2030.

The key to success is consistency and visibility of demand. This includes both the overall long-term quantum of homes to be commissioned, and the type of homes and technical solutions that will be required. This aggregated and standardised requirement, supported by our own interventions, will enable industry to invest, drive up the quality of new homes, drive down their environmental impact, and thereby create a UK-leading manufacturing industry.

Through our engagement with developers, investors, suppliers and other stakeholders, we are confident that this is a move that industry is starting to make already. There is a clear opportunity for the West Midlands to take a leadership position, demonstrating that change is not just possible but necessary. Through this strategy, WMCA is embracing its role as a facilitator and leader to shift the needle on this agenda, maximise the opportunities it creates and best support the region, its local authorities, businesses, developers, and residents.

1.0 Introduction

Our ambition is to lead the way in the provision of high quality, sustainable and efficiently delivered new homes for residents in our region while driving forward the capability and growth of our advanced manufacturing businesses and creating new employment opportunities for our workforce.

Our Homes for the Future Strategy is the latest step in our work to encourage and incentivise the construction industry to accelerate its shift towards low and zero carbon new homes. The strategy builds on our previous work on advanced manufacturing in construction and zero carbon homes, maximising the benefit to be derived from the HMG's Future Homes Standard which will come into force in 2025.

We will go further and faster by setting out a core set of enhanced sustainability, climate resiliency and construction methodology targets. This will enable us to allocate land, funding and other support to projects that can be shown to meet our expectations. This approach will support us to achieve WMCA's net zero target by 2041, ahead of the UK's national target of 2050.

Homes are the highest carbon emitters in our region, accounting for **39% of emissions**, ahead of both industry and transport. Retrofitting an existing home is estimated to cost **five times more** than designing a new home which is energy efficient. By building sustainable new homes now, we will therefore reduce the need for retrofitting within the region and avoid adding to the **1.2 million homes** within the West Midlands that currently need retrofitting.

Our output-based approach will help developers to produce warmer, safer, more energy-efficient homes; tackle fuel poverty; and reduce the threat from energy price hikes. This approach will boost confidence and capability in the construction industry so that new technologies, driven by advanced manufacturing construction, become the established approach to delivering zero carbon homes, supporting a transition to greener construction, and increasing the number of green, sustainable jobs in the construction sector.

2.0 Policy background

National Policy

National Government is incentivising advanced and modern methods of construction as a means of modernising the construction sector. Building regulations will change in 2025 and further change is likely in the future.

In relation to construction skills, National Government has recognised the need to promote advanced methods of construction (AMC) as a way of establishing a more productive and sustainable industry model since the Housing White Paper of 2017. This has been most clearly articulated in the 2021-2026 Affordable Homes Programme which sets mandated minimum levels of MMC on supported projects including those with Homes England's Strategic Partners. Homes England reaffirmed this commitment in its latest 2023 – 2028 Strategic Plan which includes Key Performance Indicators for MMC and Sustainability Performance, including targets for both operational and embodied carbon.

In relation to sustainability, Government has recognised the inevitability of having to regulate the industry's decarbonisation journey, starting with operational carbon via the Future Homes Standard which will be introduced in 2025. While Government has not yet signalled the regulation of embodied carbon, there is increasing parliamentary receptiveness and lobbying momentum through the Part Z campaign. The perception in industry is that embodied carbon will also eventually be regulated, bringing the UK into line with several other countries including....

At present, Government has not connected advanced or modern methods of construction with decarbonisation through policy or regulation, preferring to allow industry to develop its own solution, but there are clear signs that there will be policy shifts in future. Through making this link, WMCA sets itself apart not only from government, but also from other regional authorities.

Regional policy

Regional policy on advanced and modern manufacturing in construction and zero carbon homes has been developing for some time. WMCA's previous work has shown that it is only through construction modernisation that net zero aspirations can be achieved at scale.

Our Roadmap for Advanced Manufacture in Construction helped us to set out expectations, on WMCA-funded projects, that new developments of a certain size should incorporate elements of Modern Methods of Construction. We recognised that the wider definition of ‘AMC’ had significant potential to drive a range of long-term benefits to the construction industry and that, by encouraging the use of advanced manufacturing components on new home developments in the West Midlands, we could deliver considerably wider benefits to the region.

It was also recognised that use of AMC could support five of WMCA’s existing policy goals for sustainable and inclusive growth:

- Accelerating housing delivery
- Delivering a zero-carbon future
- Investing in regional and inclusive growth
- Design that reflects the character, context, and aspirations of our communities
- Creating climate resilient and future proof homes that are safer and warmer for our communities.

Following the work on advanced manufacturing, the West Midlands Zero Carbon Homes Routemap set out a series of requirements for new homes to achieve defined net zero standards in operation. The goal was set to deliver zero carbon homes in the region by 2025 and achieve net zero carbon emissions in line with WM2041. The Zero Carbon Homes Routemap sets out programmes of action over the short, medium, and long-term which enable the WMCA, and its partners, to meet these ambitious targets.

The Homes for the Future strategy build on this pioneering work to date. It also branches out more widely to act as an integrated strategy and a cross-cutting document that is directly linked to a range of wider regional policies and programmes including:

- unlocking the potential of the ‘Manufacture of Future Housing’ economic cluster in the West Midlands Plan for Growth (launched July 2022)
- the West Midlands brownfield housing and regeneration programme (launched in the 2018 Housing Deal)
- #WM2041
- Investment and Levelling Up Zones (March 2023 Devolution Deal)

- the Affordable Housing Programme (March 2023 Devolution Deal)
- the Public Land Programme (March 2023 Devolution Deal)
- the investment opportunity in future homes set out in the West Midlands Investment Prospectus (launched May 2023); and
- the high-level deliverables of the Housing & Land Portfolio agreed by WMCA Board (February 2023).

Through the West Midlands Plan for Growth the region has laid out a path for returning to a growth trajectory, spreading opportunity and jobs across the region and helping to level-up the UK. The Homes for the Future strategy will help to revolutionise the modern construction industry, not least by increasing the rate of production. Also, by expanding the skills base of the modern construction industry, WMCA can help to upskill workers, future proof jobs and increase skills in an in-demand job sector. Being a pioneer will create a skills base that will make West Midlands workers and knowledge in demand across the country.

The programme will also showcase the potential of the region, attracting further investment, confidence and funding. It will show that the region is able to lead both nationally and internationally when it comes to decarbonisation and modern methods of construction.

3.0 Market Perspectives

The construction challenge

The traditional construction sector suffers from systemic challenges which significantly and negatively affect its capacity to supply the homes of the future that the West Midlands will need.

Data from the Office of National Statistics confirms that the economically active workforce has reduced by 11% since 2019, a combination of demographics, the pandemic, migration patterns and insufficient new talent replenishment. One third of the workforce is now aged over 50 and the average age is increasing, yet in many physically intense trades most workers plan to retire at 55-60 years old and not at the state retirement age. The Construction Industry Training Board (CITB) in its most recent survey estimated that 25,000 extra construction workers are needed in the West Midlands in the next 4 years, yet societal change means a smaller talent pool is choosing construction as a career.

Amplifying the workforce challenge is anecdotal evidence that productivity has declined further since the pandemic from what was already a low base. This is now driving wage inflation and reducing relative output, creating resource scarcity which threatens viability of future projects. The combination of regulatory change relating to both carbon and safety, with a shrinking construction workforce and shortages of key traditional skills, creates an unsustainable situation.

We therefore have a national and regional productivity and resource security risk which requires immediate action to safeguard our ability to build more and better-quality homes in the future with the growing threat of a resource constrained workforce. The status quo is not an option. Homes for the Future is therefore not just an environmental necessity, but an economic one.

Signs of change

The pivot towards more advanced methods for building homes has been slow to emerge over the last few years despite Government incentivisation and mandate through the programmes such as the Affordable Homes Programme.

In the past eighteen months, however, the combination of a growing realisation of the extent of workforce erosion and the likely implications of the Future Homes Standard is starting to motivate major national housebuilders to review their construction strategies. Several major housebuilders have embarked on building factories to produce a proportion of their new homes to safeguard additional capacity despite workforce challenges, driven by recognition of the twin challenges of resource scarcity and carbon reduction.

These businesses are formally linking AMC and MMC with the ability to deliver higher performing homes in bigger numbers. A West Midlands regional agenda which formally links AMC with decarbonisation of housebuilding can therefore be seen in the context of an increasing acceptance by industry that things are changing. Businesses of all sizes need to prepare for this change by doing more than small scale pilot or R&D projects.

Current Manufacturing Capacity in the West Midlands

The West Midlands AMC sector has the capacity to deliver around 4,500 new homes using AMC today which, if undertaken would represent roughly 10% of the UK-wide output. Presently, the West Midlands is delivering around 2,000 to 2,500 homes per year of that capacity. Delivery of an additional 2,000 homes per annum in the region using AMC is equivalent to 2 factories with 1,000 homes per annum capacity or one larger facility that would accommodate the entirety of the additional 2000 homes.

Evidence suggests that growth in AMC and MMC, particularly that around volumetric is highly additional and will not displace existing construction activity. Although more challenging to establish and mature as seen from recent market setbacks, primarily due to the absence of a strong supply chain, this activity is also likely to generate a considerable degree of economic value through the wider supply chain. It is anticipated that AMC and MMC activity will indirectly support 560 jobs in the supply chain, generating roughly £44m in Gross Value Added in the West Midlands.

The need for leadership

As part of this process, there is a need for strong leadership as the industry remains traditionally cost conscious and focused on the near term. The uptake of advanced building techniques in the West Midlands can be accelerated using the tools and powers secured by the region through its devolution and funding deals with Government. The intelligent use of

public land supply, affordable housing funding, brownfield funding, levelling up and investment zones, strategic partnerships and the use of best value procurement tools to level the playing field, can all help offset the short-term additional costs of innovation, prior to anticipated long-term cost savings.

This strategy places the West Midlands at the vanguard of a wave of change in housebuilding over the coming decade. In doing so, it will give our local supply chain a significant first mover advantage in growing capacity, capability and to scale the technical solutions that will be required nationally in the coming years.

4.0 Inclusive growth and climate resilience

The West Midlands Inclusive Growth Framework lays out our vision for delivering inclusive growth across the region. Ensuring that our residents live and work in healthy environments is vital to achieving this vision. Decent homes which are affordable, safe and fit for purpose have a huge impact on an individual's ability to thrive and access opportunities where they live. The Homes for the Future strategy takes critical steps towards our ambition for inclusive growth, with the potential to delivering a number of significant benefits.

Fuel poverty

Over half of all neighbourhoods in the West Midlands are in the bottom 20% when it comes to fuel poverty, nearly three times the national average. An estimated 235,512 homes are classed as being fuel poor homes. At 17.5% of all homes, this is the highest rate of fuel poverty in any English region, with some local areas experiencing much higher rates of over 40%. The Homes for the Future strategy will help to alleviate this problem by reducing costs for occupiers, building a better physical fabric for new homes with higher insulation standards and reduced energy costs.

Health and well-being

Well-designed and well-built homes also have an impact on our health and well-being. Since the publication of the Marmot Review in 2010, life expectancy in England has stalled and health inequalities have continued to widen. Across the region, both life and healthy life expectancy remain lower the national average. This has been both exposed and exacerbated by the ongoing coronavirus pandemic and the cost-of-living crisis, with our ethnic minority communities among those most affected.

Cold homes can affect or exacerbate a range of health problems including respiratory and circulatory problems and increase the risk of poor mental health. It is estimated that 10% of excess winter deaths are directly attributable to fuel poverty, and a fifth of excess winter deaths are attributable to the coldest quarter of homes. Cold homes can also affect wider issues, such as educational performance among children and young people, as well as work absences.

Homes for the Future means that the region will be able to deliver more sustainable, warmer, more energy efficient, climate resilient homes that will be healthier, happier properties for residents to occupy from the outset, reducing the need for later improvements.

Zero waste construction/Circular economy

Research conducted during the preparation of WMCA's Circular Economy Routemap found that the construction industry is responsible for over 50% of the waste produced in the West Midlands. The move to a circular economy can extend the life cycle of the resources used to make products, reducing or eliminating waste. It can also drive clean economic growth and the creation of tens of thousands of new jobs in low carbon and green technologies.

The transition to a circular economy - one which encourages the repair, reuse and regeneration of resources and materials as well the use of renewable energy - is seen as critical if the West Midlands is to achieve its target of becoming a net zero carbon region within the next 20 years. Homes for the Future will support the move towards more sustainable construction materials, generating skills and talent within the region, and will encourage a shift to more locally and sustainably sourced construction materials with a consequent reduction in the waste of construction materials.

Retrofit

WMCA has ambitious plans to retrofit 50,000 homes across the West Midlands, targeting older homes that have low energy efficiency and cause households to pay far too much on their energy bills.

As well having a supporting WMCA's ambition to become net zero by 2041, modern construction techniques will also contribute to improvements in local employment and training. The Homes for the Future Strategy also helps to ensure that we are not constructing more homes that will need to be retrofitted in future.

Climate adaptation and resilience

Rising temperatures bring changing weather patterns and climate-related hazards, including (but not limited to) longer and more frequent heatwaves, increased flood risk, disrupted supply chains, power cuts and water scarcity. The West Midlands built environment is designed for past and current – rather than future – climate scenarios. There is a need to

adapt how we design properties and the materials we use to build them to ensure that they are resilient against climate-related impacts.

The Homes for the Future strategy will improve the resilience of new developments to heat-related risks through consideration of:

- **passive design options**, protecting properties and occupants from the risk of heat stress and overheating
- **ventilation and airflow** to prevent overheating and improvement of air quality
- **comprehensive overheating analysis** to ensure all habitable parts of the property are comfortable and liveable for occupants
- **fabric performance** under future climate scenarios
- **the BRE Home Quality Mark** to demonstrate that property design has accounted for climate risks to health and wellbeing and running costs of the build

5.0 Framing our strategy

Our strategy is designed to sustain the West Midlands leadership position in manufacturing and some forms of construction technologies. Our strategic response has been to set an ambitious long term performance standard for new homes, aligned to a series of realistic but challenging interim milestones. These standards are all aligned to industry benchmarks and, critically, are outcome targets which specify the performance that we require, not the technologies or solutions that might be used to achieve that. This will allow us to incentivise innovation and participation across the whole supply chain including SMEs.

Brownfield land - The West Midlands already has a national leadership position in brownfield remediation through its National Brownfield Institute and multi-million-pound brownfield regeneration programme, and our strategy is intended to augment this position in the areas of advanced manufacturing in construction and net zero housebuilding.

Plan for Growth - The region's medium term growth strategy, the Plan for Growth, identifies the manufacture of future housing as one of eight key growth cluster opportunities for the region, with the potential to add 3,700 new, high value jobs to the West Midlands economy.

This flexibility means that the strategy can support a more inclusive and diverse supply chain growth – for developers, investors, and suppliers – and will be open to any supplier or innovator who can robustly achieve the technical standard, from major businesses to start ups and SMEs.

The strategy has also been designed to ensure that we do not force the industry to move solely towards 'modular' or volumetric housing. The recent, well publicised challenges of some suppliers and housebuilders show clearly that the likely maturity profile of the UK's AMC/MMC market will require a diverse range of solutions spanning all seven of the Government's defined categories of MMC covering panelisation, sub-assembly use, innovative materials, and on-site technologies.

The outcome specification set out in our strategy will enable more hybrid approaches to AMC to be brought forward to achieve the standard.

Research and Development

We will further develop strong relationships between regional academic institutions and industry. The West Midlands has some of the strongest examples of vocational education in the country through organisations such as Dudley College and the School of Architecture and the Built Environment at Wolverhampton University. The region’s strong manufacturing research and development network such as The National Brownfield Institute, the Warwick Manufacturing Group (WMG) at Warwick University, the Manufacturing Technology Centre (MTC) will support delivery. Homes for the Future will create an improved data and evidential base from which both WMCA and its regional partners can continue to build upon best practice.

6.0 The Technical Standard

The Homes for the Future Technical Standard provides clarity around the targets that must be achieved and the potential methods of achieving them. It provides a long-term ambition aligned to short term progressive changes and allows industry to evolve solutions in response. It reflects ambitions in both national and regional policy and, as such, aims to incentivise:

- a speedier and more comprehensive adoption of more productive and assured outcome building techniques
- a higher standard of energy performance compared with the Building Regulation changes, and
- reduced embodied carbon in construction that is not part of Building Regulations at present.

Measuring performance standards

The Technical Standard translates these objectives into measurable performance standards with increasing target levels of performance from the current baseline to 2030. Those measures and targets are considered under headings:

- *Construction: More productive building techniques*
 - This is measured using the Pre-Manufactured Value (PMV) metric which calculates the material proportion of a building project's cost as opposed to other cost factors including plant, labour, and management. This is a proxy metric for the extent of AMC/MMC as the greater the extent of AMC, the greater the material element relative to other project costs. PMV is already used as a tool by Homes England to incentivise AMC/MMC use.
 - PMV does not favour any building technology over another, and increased PMV can be achieved in a number of ways, providing developers with the space to innovate and develop efficient models of delivery without specifying which construction methodologies should be pursued.
- *Sustainability: More new energy efficient homes*

Through a mix of careful design, enhanced fabric efficiency and the inclusion of non-fossil fuel energy sources such as heat pumps and solar panels, the aim is to incentivise the delivery of new, more energy efficient homes. Two industry standard metrics are used to measure these requirements:

 - the energy intensity of a new home: the amount of energy required to use it, proportional to its size
 - the space heat demand: a measure that describes the amount of heat required to heat a building and maintain the inside at a particular temperature.

The achievement of these standards places requirements on developers to use higher performing building materials, different heating technologies, and to design for high energy performance from the outset.
- *Sustainability: Reducing life cycle carbon in construction*
 - Carbon emissions are created by the materials used in constructing new homes, and by the construction process itself. This is known as embodied carbon and it can be reduced in several ways including the use of lower carbon materials, reduced material and process waste and smarter site operations such as fewer transport journeys.

- There is no requirement in building regulations or other legislation to reduce these embodied carbon emissions. To take a leadership position, however, and to align with best practice in other countries as well as the likely future trend in the industry, we will require projects funded by WMCA progressively to reduce embodied carbon. This will be measured using the whole life carbon assessment as defined by RICS and aligned to the LETI timeline. The new Net Zero Carbon Buildings Standard is currently being developed and we will ensure the carbon metrics in our strategy are aligned in terms of definitions and measurement protocols.

Overall, the achievement of these standards places requirements on developers and contractors to use higher performing building materials, different heating technologies, and to design for high energy performance from the outset.

The Standard, Targets and Trajectory

Our technical standard and targets are being driven by future changes in national standards such as the introduction of improvements to the minimum standard of fabric efficiency required by building regulations, with a first step implemented in 2023 and a further improvement to follow in what is known as the Future Homes Standard in 2025. The precise extent of this standard is currently being fixed by Government following engagement with the sector, led by an industry group known as the Future Homes Hub.

Our Construction and Sustainability Targets, as defined within the Technical Standard, are set out Appendix A. This provides:

- a granular description of how the standards can be achieved
- a clearly defined trajectory increasing over time
- a definition of the evidence required for funding purposes.

Table 1 provides a snapshot of these requirements.

2030 target scenario - Achieve net zero carbon in construction and in operation
<p>Energy:</p> <ul style="list-style-type: none"> • EUI: <35kWh/m2 operational energy use (including regulated and unregulated energy). • Space heating demand of <15KWh/m2/yr <p>Embodied Carbon:</p> <ul style="list-style-type: none"> • Embodied carbon calculation to verify target equivalent to <300kgCO2/m2 <p>Construction:</p> <ul style="list-style-type: none"> • All developments achieve PMV of 55%
2025 target scenario - Achieve net zero carbon in operation
<p>Energy:</p> <ul style="list-style-type: none"> • EUI: <35kWh/m2 operational energy use (including regulated and unregulated energy). • Space heating demand: 15-20 KWh/m2/yr <p>Embodied Carbon</p> <ul style="list-style-type: none"> • Embodied carbon calculation to verify target equivalent to <400kgCO2/m2 <p>Construction:</p> <ul style="list-style-type: none"> • All developments achieve PMV of 50%
2023 Minimum Standard
<p>Energy:</p> <ul style="list-style-type: none"> • EUI: <70kWh/m2 operational energy use (including regulated and unregulated energy). • Space heating demand: 15-20KWh/m2/yr <p>Embodied Carbon</p> <ul style="list-style-type: none"> • Embodied carbon calculation to verify target equivalent to <500kgCO2/m2 <p>Construction:</p> <ul style="list-style-type: none"> • Preference for 50% PMV • Evidence that DfMA process guidance has been adhered to
Statutory (plus enhanced measurement & monitoring)
<p>Energy</p> <ul style="list-style-type: none"> • 31% reduction on Dwelling Emission Rate against the Target Emission Rate of Building Regulations Part L 2013. <p>Embodied Carbon</p> <ul style="list-style-type: none"> • As a minimum all delivery partners must measure embodied carbon impacts of the proposed construction. <p>Construction</p> <ul style="list-style-type: none"> • Review opportunity for PMV uplift across all MMC categories

7.0 How the standard will be applied

The Technical Standard will be embedded in our requirements for devolved housing and land funding as part of the Single Assurance Framework process. The Technical Standard defines the minimum required outcomes and lays out the codified expectations that any applicant for residential funding should achieve, as well as how these can be achieved. Embedding this robust standard as part of our future pipeline is essential to support the delivery of new homes enabled by the Deeper Devolution Deal (March 2023). Combined with guidance documentation for investors and developers, we will ensure the provision of clarity in relation to the standard, how it can be achieved and the benefits of doing so.

Measuring Compliance

The standard is based on a 'yes/no' approach to measuring compliance, meaning that its requirements can be quantitatively described, measured and assessed. This will enable

transparent and consistent decision-making based on compliance with the standard, and robust reporting and monitoring of impact and performance.

While some within the construction industry will welcome this shift, and some already have plans to operate above the government's standard, others can be reluctant to adopt new approaches, particularly in relation to a subject on which there is limited understanding at present. To achieve this, the Technical Standard makes provision for an 'exceptions approach' which recognises that, in some circumstances, the new standard cannot yet be achieved. In those cases, developers will retain their ability to apply for funding, subject to adopting relatively minor process changes and, crucially, measuring and monitoring the carbon performance of their projects. This is intended to drive understanding and behaviour change even where practical change is not yet possible.

Pre-manufactured value (PMV)

While the region will promote the fullest definition of pre-manufacturing in calculating PMV scores, Homes for the Future has been created to incentivise the use of a wide range of manufactured solutions. The PMV metric allows developers to choose the most appropriate method for achieving the minimum level of off-site manufacture, which in turn will allow the market to decide the optimal technical solutions to achieve the performance standards required. This approach will support the establishment of a fully diverse supply chain which spans lower tech solutions such as timber framing through to more advanced panelisation techniques, sub-assemblies such as internal pods and service cupboards, innovative materials and new on-site technologies and process improvements.

High quality homes, high quality design

Above all, irrespective of method and material, the West Midlands wants to promote high quality. Innovation is no excuse for poor quality, so it will be imperative that robust technical accreditation is used, testing and certification methods are utilised, combined with a competent and appropriately skilled workforce both on and offsite.

8.0 Projects paving the way

Throughout the West Midlands, there are various projects, at various stages of completion, that meet at least some of the expectations of Homes for the Future, providing proof of concept and viability.

Citizen Housing Pilot Scheme – Littlethorpe

Citizen Housing has recognised the impact of communities in delivering small infill sites that are not possible to deliver through traditional means via the exploration of modular construction.

- 120 garage sites in Coventry which have the potential to provide up to 650 new homes
- An estimated 75% PMV

Totally Modular provided a full turnkey solution whereby two energy efficient houses for affordable rent were constructed on a redundant infill site, suffering from blight. The houses were installed on-site in less than 48 hours and received an A+ EPC rating compared to the national average of a D rating. The houses were completed off-site in controlled factory conditions and they exceeded building regulations, therefore providing higher manufacturing solutions with lower risk and greater speed, cost-effectiveness and consistency. Both houses scored a 98/100 CO₂ rating, predicting that each house will generate just two tonnes of CO₂ every year, compared to a UK average of six tonnes.

The off-site production reduced waste by up to 80% and helped reduce CO₂ by 50% when compared to traditional site construction. The solar panels with battery back up guarantee residents a 20% saving on their fuel bills. Annual analysis showed total running costs at £1.48 a day for the three-bedroom five-person house. Air source heat pumps and mechanical ventilation with heat recovery system are installed to manage air quality.

Midland Heart – Project 80

Project 80 is a research and development programme in conjunction with Birmingham City University, key product manufacturers and industry bodies, and contractors spread across several sites.

- Developing, monitoring and understanding over 50 homes that meet the Future Homes Standard before 2025
- An estimated 45% PMV

Vistry Partnerships – Europa Way, Leamington Spa

In 2021 Vistry Partnerships delivered an ambitious housing scheme at Europa Way, Leamington Spa for Warwick District Council, supporting the Council’s commitment to be a zero-carbon authority by 2025.

The use of timber frame AMC/MMC as part of the fabric solution was key to reducing both embodied carbon and a 100% reduction in regulated energy use and carbon emissions.

- 54 zero-carbon homes
- High performing fabric
- An estimated 55% PMV
- Timber frame
- Air source heat pump (ASHP)
- Solar PV panels
- Wastewater Heat Recovery (WWHR)

Birmingham City Council/Lendlease - Perry Barr Plots 8 & 9

Commissioned by Lendlease on behalf of Birmingham City Council and built by Willmott Dixon, a series of blocks of flats on the site of the former Birmingham City University campus will make up a crucial part of the Perry Barr Residential Scheme’s plan to deliver 1,400 much-needed homes for north-west Birmingham with homes being occupied in 2023.

- 430 apartments in two dual four to six-storey blocks
- 65% PMV

Due to its construction methods, this scheme saw a reduction from 100-120 workers on site to 40, roughly 60% better resource efficiency and huge cost saving advantages while also providing environmental benefits such as reduced machinery use, daily commutes and logistical challenges that come with manufacturing on a live site. Wastage is also reduced

while manufacturing in a controlled setting, increasing efficiency and sustainability of the build. This has not resulted in an impact to jobs, as instead they are based off-site.

Its MMC also increased time efficiency by 30% with approximately 30 finished bathroom pods across two development parcels installed in one day compared with an expected several weeks for a traditional build. This has maximised off-site work through factory production, allowing much greater certainty of completion on time, budget and consistency of quality.

Lightweight steel framing and Corium brick cladding has provided a 70% lighter construction than traditional methods and significant savings on foundations and temporary access requirements. This has created time and cost efficiencies for the customer, supported by standardised construction across the project, as well as environmental benefits through the use of recyclable materials, and the extension of the lifetime of resources.

WMCA Future Housebuilding Strategy

Technical Standard Cost Appraisal

18 August 2023

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Brief & Methodology

- Cast initially undertook a review of the potential cost impact of the emerging Future Homes Technical Standard for mid-terrace and flat typologies. We have since added a detached house typology and re-baselined the apartment cost estimates to a lower cost typology.
- Our baseline of each typology is based on a 'typical' approach. The modelling then considers the potential evolution of the construction costs based on proposed standards for 2023, 2025 and 2030 including considering the likely methodology that would be adopted to meet the standard (based on current-day costs).
- We also consider the changes that would be required to achieve the forthcoming Future Homes Standard 2025, which central Government has recently consulted on. We have sought to distinguish between the costs that would be incurred in achieving the WMCA standards and those that developers will need to prepare for regardless of the WMCA strategy.
- The approach to meeting the WMCA standard is based on a hypothetical scenario and includes assumptions around changing to a timber panelised approach for the detached and mid terrace properties, potential foundation savings for light structure, and an allowance for changes to mechanical, electrical and plumbing (MEP) solutions.
- The cost impact has been based on assumptions around the likely cost from experience, however, is not measured from a detailed design assessment of a specific scheme.
- A series of assumptions around the likely cost impact of the technical standards are considered. There are clearly a variety of different approaches that could be adopted; therefore, a cost range has been included to accommodate the variation between different schemes in terms of site, context, scale etc.
- The cost assessment is presented on a £/sqft basis. For the flat typology this has been derived from taking a typical 8 storey flat block as a baseline to assist in establishing the impact on the % cost impact of the proposed standard.



Assumptions & Exclusions

Assumptions - Flats	Assumptions – Mid Terrace House
<p>Baseline</p> <ul style="list-style-type: none"> ➤ The baseline schemes include concrete frame construction methodology 	<p>Baseline</p> <ul style="list-style-type: none"> ➤ The baseline schemes assumes brick and block construction methodology
<p>2023 Target</p> <ul style="list-style-type: none"> ➤ Utilisation of low carbon concretes with traditional building techniques ➤ Efficient structural grid systems with basement construction avoided ➤ Lightweight façade materials with composite windows ➤ All electric building service strategy adopting high efficiency heat pump technology. MVHR's considered in the baseline therefore not an additional cost 	<p>2023 Target</p> <ul style="list-style-type: none"> ➤ Utilisation of low carbon concrete with traditional building techniques ➤ Efficient structural grid systems with basement construction avoided ➤ Lightweight façade materials with composite windows ➤ All electric building service strategy adopting high efficiency heat pump technology and use of MVHR's
<p>2025 Target</p> <ul style="list-style-type: none"> ➤ Utilisation of low carbon concretes combined with a lightweight facade ➤ Triple glazing to be adopted as a standard, but with a composite window ➤ MVHR assumed in baseline therefore no additional cost to flat typology ➤ Additional costs associated with MEPH systems including on site renewables 	<p>2025 Target</p> <ul style="list-style-type: none"> ➤ Triple glazing to be adopted as a standard with a composite window ➤ Utilisation of low carbon concretes combined with a lightweight façade - Incorporates MVHR ➤ Allowance for enhancement to the MEPH system including on site renewables
<p>2030 Target</p> <ul style="list-style-type: none"> ➤ Triple glazing to be adopted as a standard ➤ 100% annual energy requirements to be achieved through on-site generation ➤ Assumes construction methodology (ribbed slabs or similar) will offset additional cost through saving on construction loads 	<p>2030 Target</p> <ul style="list-style-type: none"> ➤ Assumes a timber panelised approach or similar offering a lean construction methodology therefore providing foundation savings against a traditional approach ➤ Triple glazing to be adopted as a standard ➤ Allowance for 100% annual energy requirements to be achieved through on-site generation ➤ Incorporates MVHR



Key Cost Drivers – Flats

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Baseline	2023 Target	2025 Target	2030 Target
SUBSTRUCTURE			
- Standard building foundations	- Standard building foundations - Use of low-carbon concrete	- Lean foundations with efficient structural grids - Use of low-carbon concrete	- Lean foundations with efficient structural grids - Use of ultra low-carbon concretes
SUPERSTRUCTURE / FRAME			
- Standard concrete frame construction methodology	- Efficient building grid system (<8m spans)	- Utilisation of low-carbon concretes, high-recycled content and/or structural steel	- Lean design grid system (<5-6m grids) - Ribbed slab (in lieu of flat slab)
ENVELOPE			
- Aluminium double-glazed windows	- Composite double-glazed windows - Avoid heavy-weight cladding (pre-cast of aluminium unitised systems)	- Composite triple-glazed windows - Lightweight façade materials (avoid brick/pre-cast)	- Composite triple-glazed windows as standard - Low-carbon rainscreen cladding systems (timber/reclaimed materials)
SERVICES			
- MVHR - ASHP as a standard	- MVHR - ASHP as a standard - Automated lighting control	- MVHR - ASHP as a standard - Automated lighting control - On-site renewables - Primary energy appliances – Only highly efficient appliances and equipment	- MVHR - ASHP as a standard - Automated lighting control - 100% annual energy requirements to be achieved through on-site generation - Primary energy appliances – Only highly efficient appliances and equipment

Legend Items in **red text**: requirements specific to WMCA standard

Items in **black text**: requirements that are likely to be required by the Government Future Homes regulation regardless of WMCA standard



Key Cost Drivers – Mid Terraced House

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Baseline	2023 Target	2025 Target	2030 Target
SUBSTRUCTURE			
- Brick and block construction methodology	- Standard building foundations - Use of low-carbon concrete	- Standard building foundations - Use of low-carbon concrete	- Standard building foundations - Use of ultra low-carbon concrete - Lean construction methodology leading to foundation savings (in lieu of traditional approach)
SUPERSTRUCTURE / FRAME			
- Brick and block construction methodology		- Lightweight facade - Utilisation of low-carbon concretes	- Lean construction methodology - Timber panelised approach
ENVELOPE			
- Aluminium double-glazed windows - Brick and block construction methodology	- Composite double-glazed windows - Avoid heavy-weight cladding (pre-cast of aluminium unitised systems)	- Composite triple-glazed windows - Lightweight façade materials (avoid brick/pre-cast)	- Composite triple-glazed windows as standard - Low-carbon rainscreen cladding systems (timber/reclaimed materials)
SERVICES			
- MVHR and high-efficiency heat pump technology	- MVHR and high-efficiency heat pump technology - All electric service strategy - Automated lighting control	- MVHR and high-efficiency heat pump technology - All electric service strategy - Automated lighting control - Primary energy appliances – Only highly efficient appliances and equipment	- MVHR and high-efficiency heat pump technology - All electric service strategy - Automated lighting control - Primary energy appliances – Only highly efficient appliances and equipment

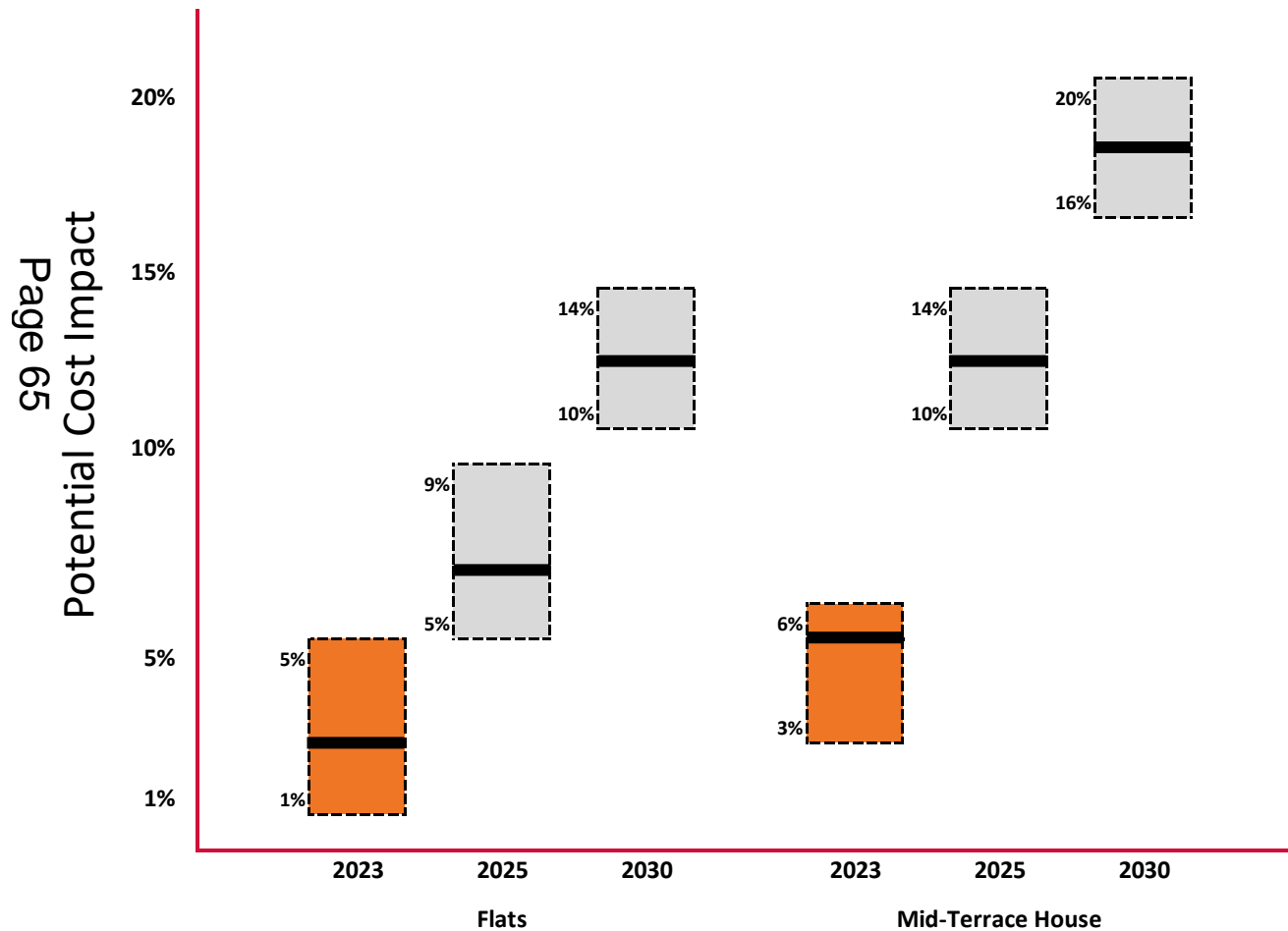
Legend

Items in **red text**: requirements specific to WMCA standard

Items in **black text**: requirements that are likely to be required by the Government Future Homes regulation regardless of WMCA standard



Emerging Findings



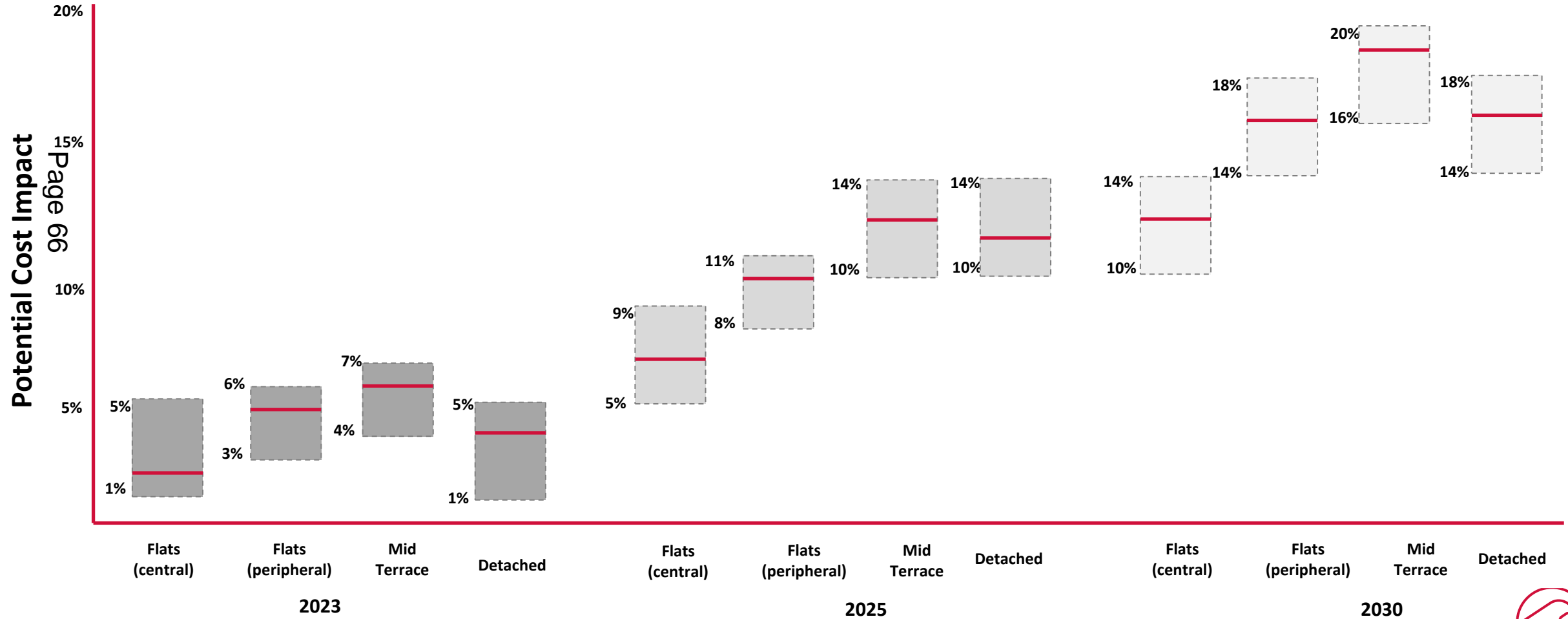
OBSERVATIONS

- The figures for 2023 are closest to current prices, involve the smallest change in construction technology.
- For every stage and for both typologies we show both the outcome of our hypothetical analysis and a wider estimated range. For instance, for 2023 in relation to flats, our cost estimating on the hypothetical development showed a 2% increase over the baseline. We show this with a line:
- In addition, we show an estimated range around that fixed point to reflect that the cost impact will vary based on local conditions. In the case of flats in 2023, we show that range as 1%-6%, based on professional judgment. These ranges are shown by the boxes marked by dotted lines.
- There are sensitivities in the way changes to technologies impact by typology where increased expenditure is either shared between multiple units (in flatted blocks) as opposed to single units (houses).
- This shows the importance of site-wide design & sustainability/ energy planning on lower rise developments – modelling of these costs will naturally improve based on actual site cost data.

NOTE:

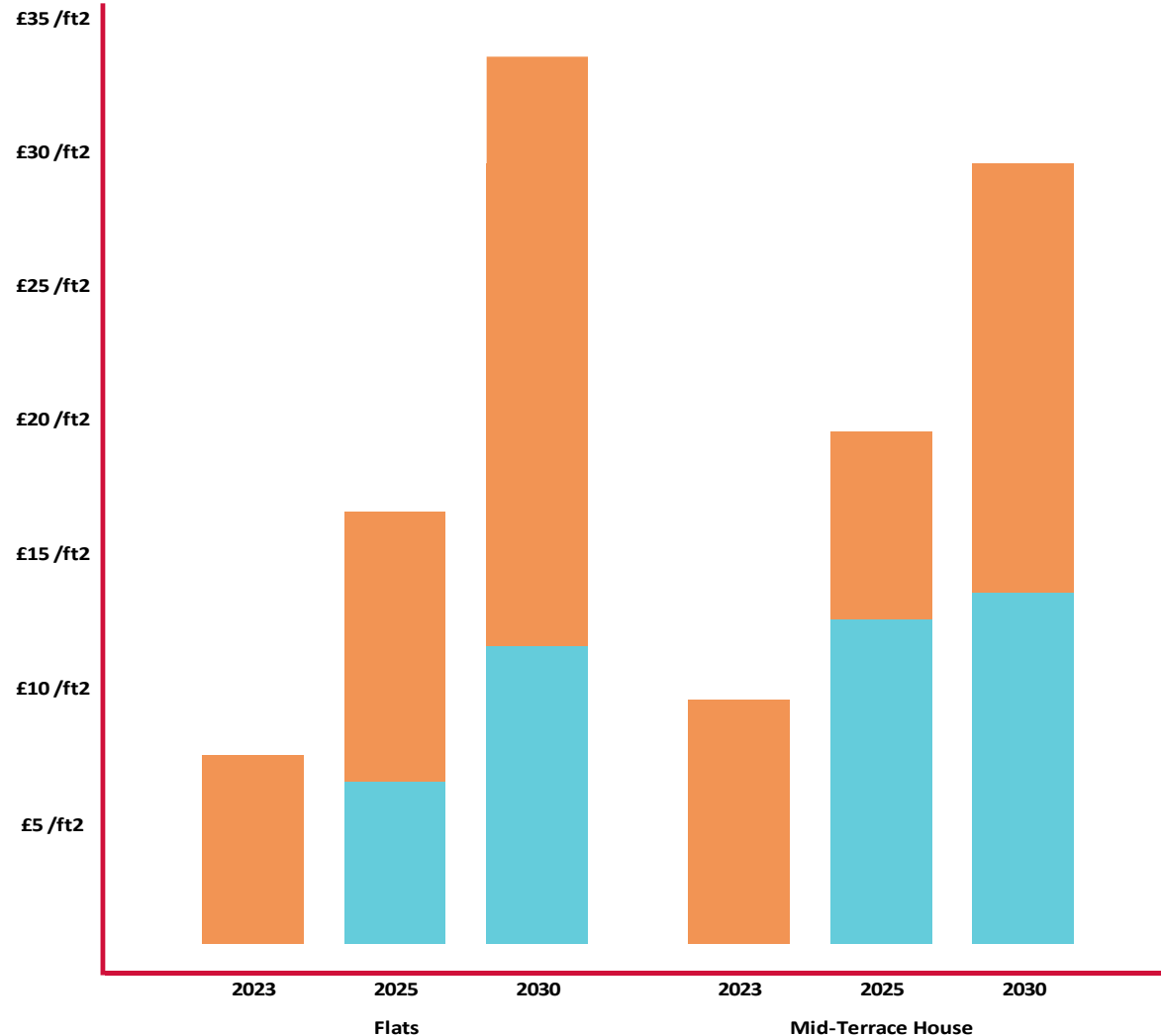
The draft technical standard also includes a “Statutory Plus” specification. This is intended to allow developers to move towards the new standards, where it is not possible or viable to implement the 2023 standard. In this situation developers should commission a whole life carbon assessment which will identify the sustainability performance of the development, showing areas where performance might be improved in future. Developers should also measure the PMV of their development and test options for improving it. Our assessment is that this will introduce an additional cost of approximately £10,000 per development.

All typologies compared



Emerging Findings – WMCA vs Future Homes

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Cost Impact



KEY

West Midlands Targets



Government Future Homes Standard



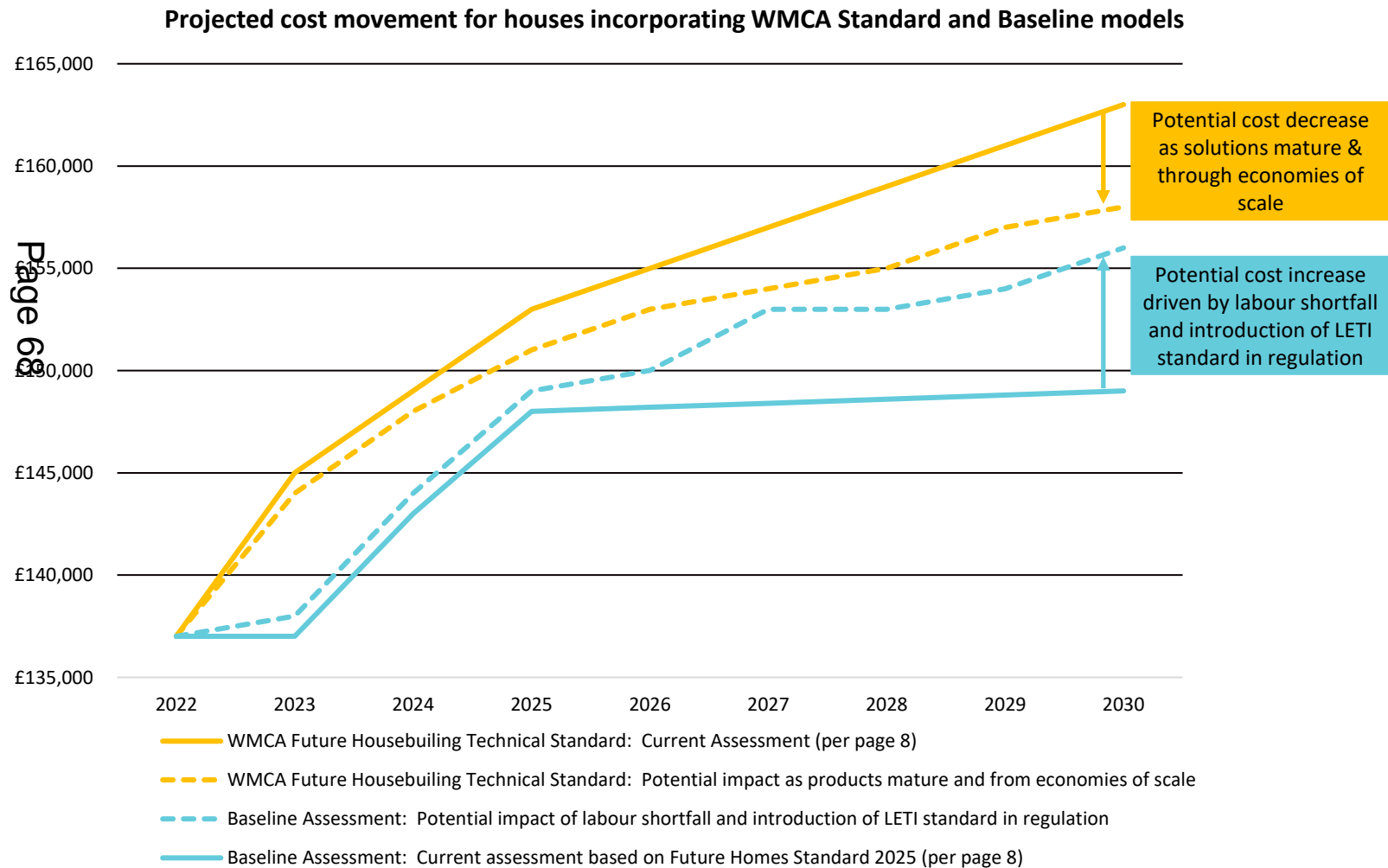
OBSERVATIONS

- Costs shown have been compared against the Government Future Homes Contender Specification CS3.
- Cost uplift shown are based on the uplift from the current day benchmark at each stage (2023, 2025 and 2030).
- The Government Future Homes Strategy picks out the elements of the overall cost increase that would have been required anyway as a result of the Government Future Homes Standard 2025.

NOTE:

The draft technical standard also includes a “Statutory Plus” specification. This is intended to allow developers to move towards the new standards, where it is not possible or viable to implement the 2023 standard. In this situation developers should commission a whole life carbon assessment which will identify the sustainability performance of the development, showing areas where performance might be improved in future. Developers should also measure the PMV of their development and test options for improving it. Our assessment is that this will introduce an additional cost of approximately £10,000 per development.

Emerging Findings – Likely future market scenarios (houses)

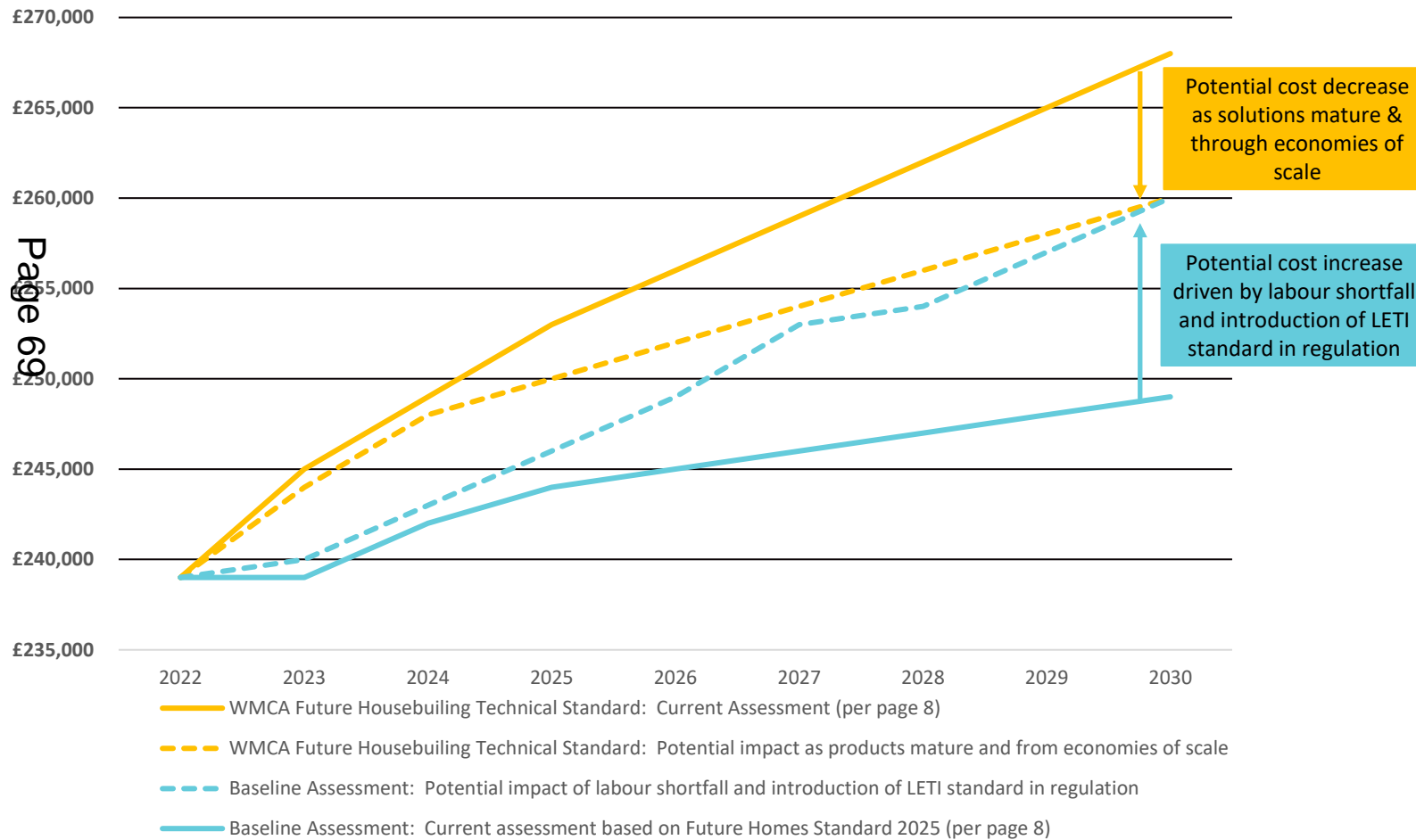


OBSERVATIONS

- In this analysis we model two scenarios against the base assessment we have shown on pages 7 & 8.
- The chart shows the base case as a per unit cost, which we have based on West Midlands benchmarks (£137,000 for a terraced house in 2022).
- First we show the progressive cost increase we have estimated on pages 7 & 8 over time. The thick orange line shows the cost estimated for the WMCA standard and the thick blue line shows the cost estimated for the baseline i.e. Futures Homes 2025. Both are based on today's prices and market conditions.
- The chart then shows realistic potential scenarios of how market conditions may change over time.
- The dotted yellow line shows the potential impact of a maturing supply chain, more efficient production and economies of scale which would be driven into the market by the WMCA standard. The scenario assumes a 3% annual efficiency against today's prices.
- The dotted blue line shows the potential cost impact of (1) known and systemic shortfalls in total construction labour availability and of key professional trades as well as (2) the cost impact that would follow the Government regulating embodied carbon in 2027. Here we assume a 3% annual cost increase driven by labour shortfalls for and the introduction of a standard similar to LETI into legislation.
- In these scenarios the total cost impact of the WMCA standard in 2030 falls from £14,000 based on today's prices to £2,000 per unit (see over for further commentary).

Emerging Findings – Potential future scenarios (apartments)

Projected cost movement for apartments incorporating WMCA Standard and Baseline models



OBSERVATIONS

- This analysis mirrors that on the previous page, this time showing the scenarios for an apartment rather than a house.
- Here our base case is £239,000 per apartment based on 2022 prices, and the thick and dotted lines show the same scenarios as the previous page.
- In these scenarios the total cost impact of the WMCA standard falls from £17,000 to zero.

CONCLUSIONS

- While pages 7&8 show the estimated impact of the WMCA in today's prices, the aim of the analysis we have shown on pages 9&10 is to demonstrate the impact of known and likely market changes.
- Construction labour shortfalls are very likely to increase the baseline cost of construction whereas the WMCA approach which incentivises a shift to different construction approaches, using MMC, a different workforce model and less site labour reliance will be less affected by this trend.
- Meanwhile it is reasonable to assume that with sufficient lead time the supply chain will adjust and become more efficient. By moving ahead of regulation, WMCA will stimulate the market to evolve sooner.
- Finally, it is highly likely that regulation will continue to get stronger and will mirror the approach WMCA is taking now by introducing embodied carbon reduction targets.
- In these realistic future scenarios the cost implication of the WMCA standard reduces to between £0 and £2,000 per new home. WMCA would also signal change sooner to the supply chain, giving regional suppliers an early mover advantage in preparing for future national change.

Further Work Required & Next Steps

Our analysis combines a detailed cost benchmarking based on a hypothetical building, with a subjective view on the potential cost movement on key solutions over time. As such we welcome any feedback, comments & suggestions on key factors such as:

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- We make a general assumption, given the increased adoption of battery storage technology, that over time this will lead to reduced costs of production, as we have seen recently with solar panel technology
 - Similarly, we have included an allowance for natural insulation, and it is likely that the supply/demand requirements should improve the availability and decrease cost
 - We assume an increasing element of MMC solutions to meet the requirements over time. These are costed to current prices but again would expect to see efficiencies emerge as output scales.
 - The costing analysis operates on a per unit basis, however the scale of development may impact this considerably both through economies of scale/supply chain accessibility which will improve for larger compared to smaller, and also as the cost of fixed plant, MEP etc will be diluted across more properties on larger developments.

Our analysis is intended to provide a guide to aid policy development. The WMCA strategy includes provision for data capture as projects are funded and progress, and this will enable live and real cost data to be captured as the strategy is implemented to evolve these initial forecasts.



Appendix - Summary Cost Table

SCOPE - Flats	Elemental Description	Baseline - West Midlands Flat (8 Storey Block)	2023			2025			2030		
			Excl.			Excl.			Excl.		
	Facilitating Works	Excl.	Excl.			Excl.			Excl.		
	Substructure Works	£8 ft2	£8 ft2	£ ft2	0%	£10 ft2	£2 ft2	1%	£10 ft2	£2 ft2	1%
	Superstructure Works	£95 ft2	£96 ft2	£1 ft2	0%	£102 ft2	£7 ft2	2%	£109 ft2	£14 ft2	5%
	Internal Finishes	£41 ft2	£41 ft2	£ ft2	0%	£42 ft2	£1 ft2	0%	£42 ft2	£1 ft2	0%
	Fixtures and Finishes	£18 ft2	£18 ft2	£ ft2	0%	£18 ft2	£ ft2	0%	£18 ft2	£ ft2	0%
	Services	£55 ft2	£59 ft2	£4 ft2	2%	£60 ft2	£5 ft2	2%	£61 ft2	£6 ft2	2%
	External Works	£4 ft2	£4 ft2	£ ft2	0%	£5 ft2	£1 ft2	0%	£12 ft2	£8 ft2	3%
	On Costs	£53 ft2	£55 ft2	£2 ft2	1%	£55 ft2	£2 ft2	1%	£56 ft2	£3 ft2	1%
	TOTAL	£274 ft2	£281 ft2	£7 ft2		£291 ft2	£17 ft2		£307 ft2	£33 ft2	
				2%			6%			12%	
	% Uplift		1% to 5%			5% to 9%			10% to 14%		

SCOPE - Mid-Terrace House	Elemental Description	Baseline - West Midlands Mid Terrace House	2023			2025			2030		
			Excl.			Excl.			Excl.		
	Facilitating Works	Excl.	Excl.			Excl.			Excl.		
	Substructure Works	£12 ft2	£13 ft2	£1 ft2	1%	£11 ft2	£-1 ft2	-1%	£11 ft2	£-1 ft2	-1%
	Superstructure Works	£59 ft2	£59 ft2	£ ft2	0%	£63 ft2	£3 ft2	2%	£67 ft2	£7 ft2	5%
	Internal Finishes	£18 ft2	£18 ft2	£ ft2	0%	£19 ft2	£1 ft2	0%	£19 ft2	£1 ft2	1%
	Fixtures and Finishes	£13 ft2	£13 ft2	£ ft2	0%	£13 ft2	£ ft2	0%	£13 ft2	£ ft2	0%
	Services	£17 ft2	£24 ft2	£7 ft2	5%	£26 ft2	£9 ft2	6%	£26 ft2	£9 ft2	6%
	External Works	£ ft2	£ ft2	£ ft2	0%	£3 ft2	£3 ft2	2%	£8 ft2	£8 ft2	5%
	On Costs	£30 ft2	£31 ft2	£1 ft2	1%	£33 ft2	£3 ft2	2%	£34 ft2	£4 ft2	3%
	TOTAL	£149 ft2	£158 ft2	£9 ft2		£166 ft2	£18 ft2		£177 ft2	£28 ft2	
				6%			12%			19%	
	% Uplift		4% to 7%			10% to 14%			16% to 20%		

Note: the percentage increases for each element may not add up to the total percentage increase due to rounding.

- The flat typology presents a lower % uplift in all three scenarios. This is driven out of the superstructure including façade changes to meet the Technical Standard representing a proportionally smaller cost element of the overall construction cost i.e. the wall to floor ratio is less therefore the cost impact of superstructure enhancement is lower.
- The baseline flat cost also assumes mechanical ventilation and heat recovery (MHVR) is 'standard'
- Battery storage where accommodated as a site wide proposal (2025 standard) assumes efficiency of scale in a flat scenario however in a mid terrace approach it is assumed the connection strategy would not offer the same efficiency



Appendix - Summary Cost Table – WMCA vs Future Homes

FLATS	Elemental Description	2023			2025			2030					
		Excl.	Total	FHS	WMCA	Excl.	Total	FHS	WMCA	Excl.	Total	FHS	WMCA
	Facilitating Works	Excl.				Excl.				Excl.			
	Substructure Works	£8 ft2	£ ft2	£ ft2	£ ft2	£10 ft2	£2 ft2	£ ft2	£2 ft2	£10 ft2	£2 ft2	£ ft2	£2 ft2
	Superstructure Works	£96 ft2	£1 ft2	£ ft2	£1 ft2	£102 ft2	£7 ft2	£4 ft2	£2 ft2	£109 ft2	£14 ft2	£7 ft2	£6 ft2
	Internal Finishes	£41 ft2	£ ft2	£ ft2	£ ft2	£42 ft2	£1 ft2	£1 ft2	£ ft2	£42 ft2	£1 ft2	£1 ft2	£ ft2
	Fixtures and Finishes	£18 ft2	£ ft2	£ ft2	£ ft2	£18 ft2	£ ft2	£ ft2	£ ft2	£18 ft2	£ ft2	£ ft2	£ ft2
	Services	£59 ft2	£4 ft2	£ ft2	£4 ft2	£60 ft2	£5 ft2	£1 ft2	£5 ft2	£61 ft2	£6 ft2	£1 ft2	£5 ft2
	External Works	£4 ft2	£ ft2	£ ft2	£ ft2	£5 ft2	£1 ft2	£1 ft2	£ ft2	£12 ft2	£8 ft2	£3 ft2	£6 ft2
	On Costs	£55 ft2	£2 ft2	£ ft2	£2 ft2	£55 ft2	£2 ft2	£ ft2	£2 ft2	£56 ft2	£3 ft2	£ ft2	£3 ft2
	TOTAL	£281 ft2	£7 ft2	£ ft2	£7 ft2	£291 ft2	£17 ft2	£6 ft2	£10 ft2	£307 ft2	£33 ft2	£11 ft2	£22 ft2
	% Uplift	1% to 5%	2%			5% to 9%	6%			10% to 14%	12%		

- Costs shown above have been compared against the Future Homes Contender Specification CS3.
- Cost uplift shown above is based on the uplift from the current day benchmark at each stage (2023, 2025 and 2030).
- No cost uplift to Future Homes Standard (FHS) in 2023 as this only comes into effect in 2025.
- No uplift to on-costs have been apportioned to Future Homes as it is believed that the Future Homes regulation does not ask for any additional reporting/testing etc than what is currently being requested at benchmark.



Appendix - Summary Cost Table – WMCA vs Future Homes

MID-TERRACE HOUSE	Elemental Description	2023			2025			2030					
		Excl.	Total	FHS	WMCA	Excl.	Total	FHS	WMCA	Excl.	Total	FHS	WMCA
	Facilitating Works	Excl.				Excl.				Excl.			
	Substructure Works	£13 ft2	£1 ft2	£ ft2	£1 ft2	£11 ft2	-£1 ft2	£ ft2	-£1 ft2	£11 ft2	-£1 ft2	£ ft2	-£1 ft2
	Superstructure Works	£59 ft2	£ ft2	£ ft2	£ ft2	£63 ft2	£3 ft2	£3 ft2	£ ft2	£67 ft2	£7 ft2	£6 ft2	£2 ft2
	Internal Finishes	£18 ft2	£ ft2	£ ft2	£ ft2	£19 ft2	£1 ft2	£1 ft2	£ ft2	£19 ft2	£1 ft2	£1 ft2	£ ft2
	Fixtures and Finishes	£13 ft2	£ ft2	£ ft2	£ ft2	£13 ft2	£ ft2	£ ft2	£ ft2	£13 ft2	£ ft2	£ ft2	£ ft2
	Services	£24 ft2	£7 ft2	£ ft2	£7 ft2	£26 ft2	£9 ft2	£4 ft2	£5 ft2	£26 ft2	£9 ft2	£4 ft2	£5 ft2
	External Works	£ ft2	£ ft2	£ ft2	£ ft2	£3 ft2	£3 ft2	£3 ft2	£ ft2	£8 ft2	£8 ft2	£3 ft2	£6 ft2
	On Costs	£31 ft2	£1 ft2	£ ft2	£1 ft2	£33 ft2	£3 ft2	£ ft2	£3 ft2	£34 ft2	£4 ft2	£ ft2	£4 ft2
	TOTAL	£158 ft2	£9 ft2	£ ft2	£9 ft2	£166 ft2	£18 ft2	£11 ft2	£7 ft2	£177 ft2	£28 ft2	£13 ft2	£15 ft2
	% Uplift	4% to 7%	6%			12%				19%			
						10% to 14%				16% to 20%			

- Costs shown above have been compared against the Future Homes Contender Specification CS3.
- Cost uplift shown above is based on the uplift from the current day benchmark at each stage (2023, 2025 and 2030).
- No cost uplift to Future Homes Standard (FHS) in 2023 as this only comes into effect in 2025.
- No uplift to on-costs have been apportioned to Future Homes as it is believed that the Future Homes regulation does not ask for any additional reporting/testing etc than what is currently being requested at benchmark.



Appendix – Detached House – Summary Cost Tables

SCOPE - Detached House	Elemental Description	Baseline	2023			2025			2030		
	Facilitating Works	Excl.	Excl.			Excl.			Excl.		
	Substructure Works	£11 ft2	£12 ft2	£1 ft2	1%	£12 ft2	£1 ft2	1%	£12 ft2	£1 ft2	1%
	Superstructure Works	£63 ft2	£63 ft2	£ ft2	0%	£66 ft2	£3 ft2	2%	£67 ft2	£4 ft2	3%
	Internal Finishes	£14 ft2	£14 ft2	£ ft2	0%	£15 ft2	£1 ft2	0%	£15 ft2	£1 ft2	1%
	Fixtures and Finishes	£8 ft2	£8 ft2	£ ft2	0%	£8 ft2	£ ft2	0%	£8 ft2	£ ft2	0%
	Services	£16 ft2	£20 ft2	£4 ft2	3%	£22 ft2	£6 ft2	4%	£22 ft2	£6 ft2	4%
	External Works	£1 ft2	£1 ft2	£ ft2	0%	£4 ft2	£3 ft2	2%	£9 ft2	£8 ft2	6%
	On Costs	£28 ft2	£29 ft2	£1 ft2	1%	£31 ft2	£3 ft2	2%	£32 ft2	£4 ft2	3%
	TOTAL	£141 ft2	£147 ft2	£6 ft2		£157 ft2	£16 ft2		£165 ft2	£24 ft2	
			4%			11%			17%		
% Uplift		1% to 5%			10% to 14%			14% to 18%			

DETACHED HOUSE	Elemental Description	2023				2025				2030			
			Total	FHS	WMCA		Total	FHS	WMCA		Total	FHS	WMCA
	Facilitating Works	Excl.				Excl.				Excl.			
	Substructure Works	£12 ft2	£1 ft2	£ ft2	£1 ft2	£12 ft2	£1 ft2	£ ft2	£1 ft2	£12 ft2	£1 ft2	£ ft2	£1 ft2
	Superstructure Works	£63 ft2	£ ft2	£ ft2	£ ft2	£66 ft2	£3 ft2	£2 ft2	£1 ft2	£67 ft2	£4 ft2	£2 ft2	£2 ft2
	Internal Finishes	£14 ft2	£ ft2	£ ft2	£ ft2	£15 ft2	£1 ft2	£ ft2	£1 ft2	£15 ft2	£1 ft2	£ ft2	£1 ft2
	Fixtures and Finishes	£8 ft2	£ ft2	£ ft2	£ ft2	£8 ft2	£ ft2	£ ft2	£ ft2	£8 ft2	£ ft2	£ ft2	£ ft2
	Services	£20 ft2	£4 ft2	£ ft2	£4 ft2	£22 ft2	£6 ft2	£ ft2	£6 ft2	£22 ft2	£6 ft2	£ ft2	£6 ft2
	External Works	£1 ft2	£ ft2	£ ft2	£ ft2	£4 ft2	£3 ft2	£3 ft2	£ ft2	£9 ft2	£8 ft2	£ ft2	£8 ft2
	On Costs	£29 ft2	£1 ft2	£ ft2	£1 ft2	£31 ft2	£3 ft2	£ ft2	£3 ft2	£32 ft2	£4 ft2	£ ft2	£4 ft2
TOTAL	£147 ft2	£6 ft2	£ ft2	£6 ft2	£157 ft2	£16 ft2	£5 ft2	£11 ft2	£165 ft2	£24 ft2	£2 ft2	£22 ft2	
		4%				11%				17%			
% Uplift	1% to 5%				10% to 14%				14% to 18%				

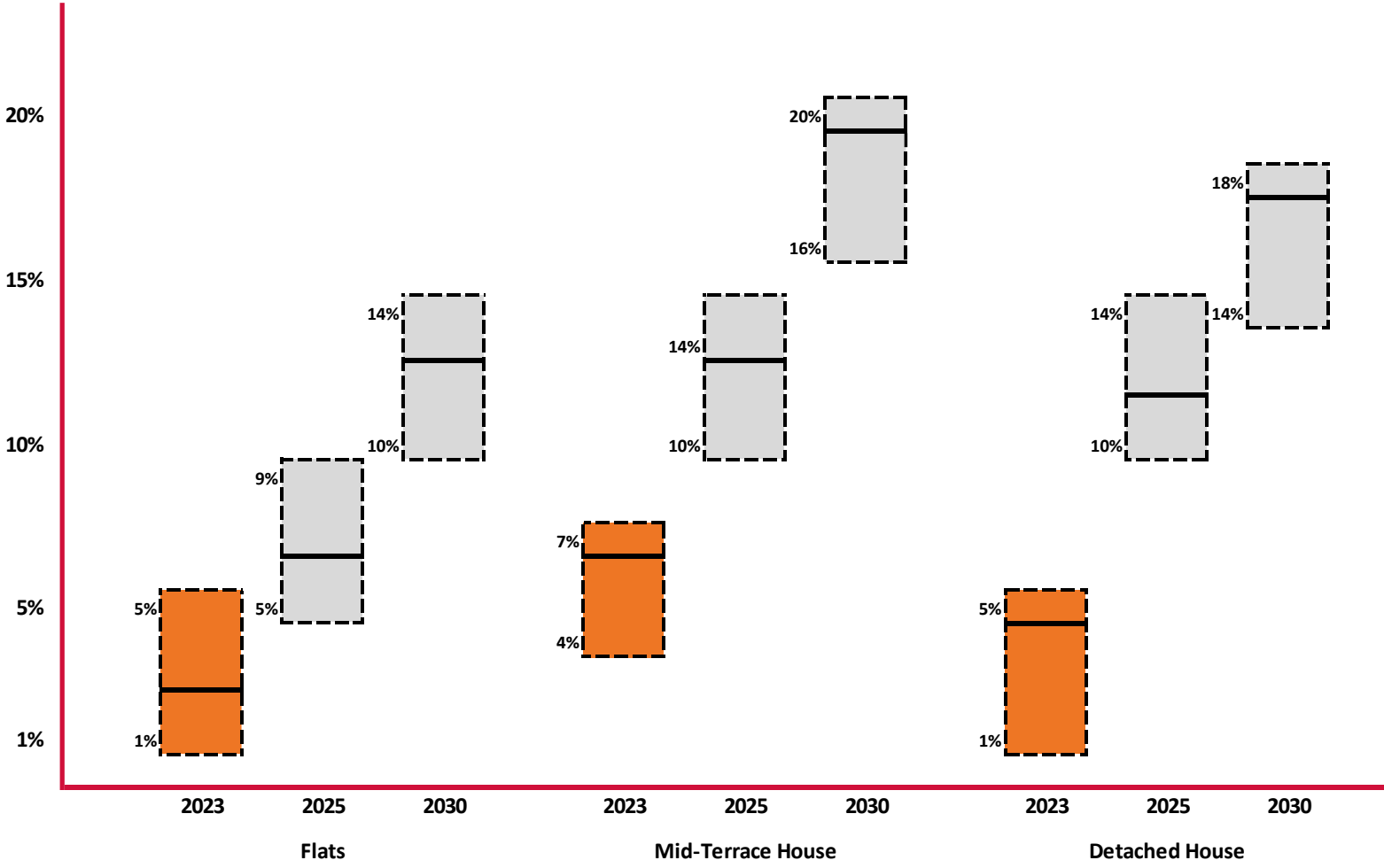
Detached House

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Following dialogue with the H&L Delivery Board we have developed an additional analysis, using a detached typology which we show here. This is in addition to the semi-detached typology that was previously calculated.



Appendix – Detached House – WMCA vs Future Homes

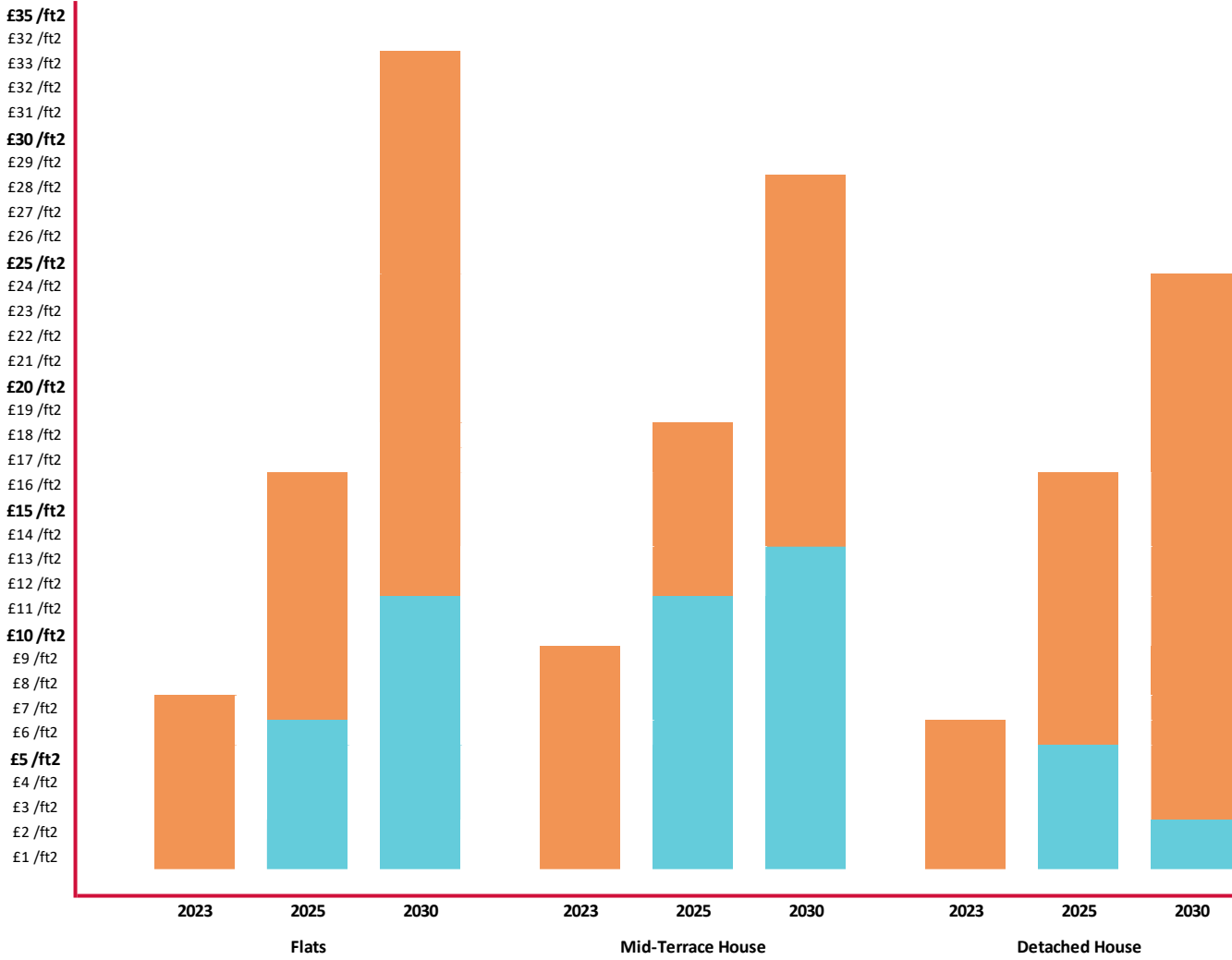


Detached House
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Appendix – Detached House – WMCA vs Future Homes

Detached House
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Appendix – Revised Flats – Summary Cost Tables

SCOPE - Flats Revised	Elemental Description	Baseline - West Bromwich Flat (4 Storey Block)			2023			2025			2030		
		Excl.	£ ft2	%	Excl.	£ ft2	%	Excl.	£ ft2	%	Excl.	£ ft2	%
	Facilitating Works	Excl.			Excl.			Excl.			Excl.		
	Substructure Works	£16 ft2		0%	£16 ft2	£ ft2	0%	£18 ft2	£2 ft2	1%	£18 ft2	£2 ft2	1%
	Superstructure Works	£62 ft2		0%	£63 ft2	£1 ft2	0%	£67 ft2	£5 ft2	3%	£71 ft2	£9 ft2	6%
	Internal Finishes	£24 ft2		0%	£24 ft2	£ ft2	0%	£25 ft2	£1 ft2	0%	£25 ft2	£1 ft2	1%
	Fixtures and Finishes	£12 ft2		0%	£12 ft2	£ ft2	0%	£12 ft2	£ ft2	0%	£12 ft2	£ ft2	0%
	Services	£39 ft2		4%	£45 ft2	£6 ft2	4%	£46 ft2	£7 ft2	5%	£47 ft2	£8 ft2	5%
	External Works	£4 ft2		0%	£4 ft2	£ ft2	0%	£6 ft2	£2 ft2	1%	£11 ft2	£7 ft2	5%
	On Costs	£36 ft2		1%	£38 ft2	£2 ft2	1%	£39 ft2	£3 ft2	2%	£40 ft2	£4 ft2	2%
	TOTAL	£194 ft2			£202 ft2	£8 ft2		£213 ft2	£19 ft2		£224 ft2	£30 ft2	
				4%						10%			16%
	% Uplift			3% to 6%				8% to 11%			14% to 18%		

FLATS REVISED	Elemental Description	2023			2025			2030					
		Excl.	Total	FHS	WMCA	Excl.	Total	FHS	WMCA	Excl.	Total	FHS	WMCA
	Facilitating Works	Excl.				Excl.				Excl.			
	Substructure Works	£16 ft2	£ ft2	£ ft2	£ ft2	£18 ft2	£2 ft2	£ ft2	£2 ft2	£18 ft2	£2 ft2	£ ft2	£2 ft2
	Superstructure Works	£63 ft2	£1 ft2	£ ft2	£1 ft2	£67 ft2	£5 ft2	£3 ft2	£2 ft2	£71 ft2	£9 ft2	£4 ft2	£5 ft2
	Internal Finishes	£24 ft2	£ ft2	£ ft2	£ ft2	£25 ft2	£1 ft2	£1 ft2	£ ft2	£25 ft2	£1 ft2	£1 ft2	£ ft2
	Fixtures and Finishes	£12 ft2	£ ft2	£ ft2	£ ft2	£12 ft2	£ ft2	£ ft2	£ ft2	£12 ft2	£ ft2	£ ft2	£ ft2
	Services	£45 ft2	£6 ft2	£ ft2	£6 ft2	£46 ft2	£7 ft2	£1 ft2	£7 ft2	£47 ft2	£8 ft2	£1 ft2	£7 ft2
	External Works	£4 ft2	£ ft2	£ ft2	£ ft2	£6 ft2	£2 ft2	£2 ft2	£ ft2	£11 ft2	£7 ft2	£ ft2	£7 ft2
	On Costs	£38 ft2	£2 ft2	£ ft2	£2 ft2	£39 ft2	£3 ft2	£ ft2	£3 ft2	£40 ft2	£4 ft2	£ ft2	£4 ft2
	TOTAL	£202 ft2	£8 ft2	£ ft2	£8 ft2	£213 ft2	£19 ft2	£6 ft2	£14 ft2	£224 ft2	£30 ft2	£5 ft2	£25 ft2
			4%				10%				16%		
	% Uplift		3% to 6%			8% to 11%				14 to 18%			

Revised Flats

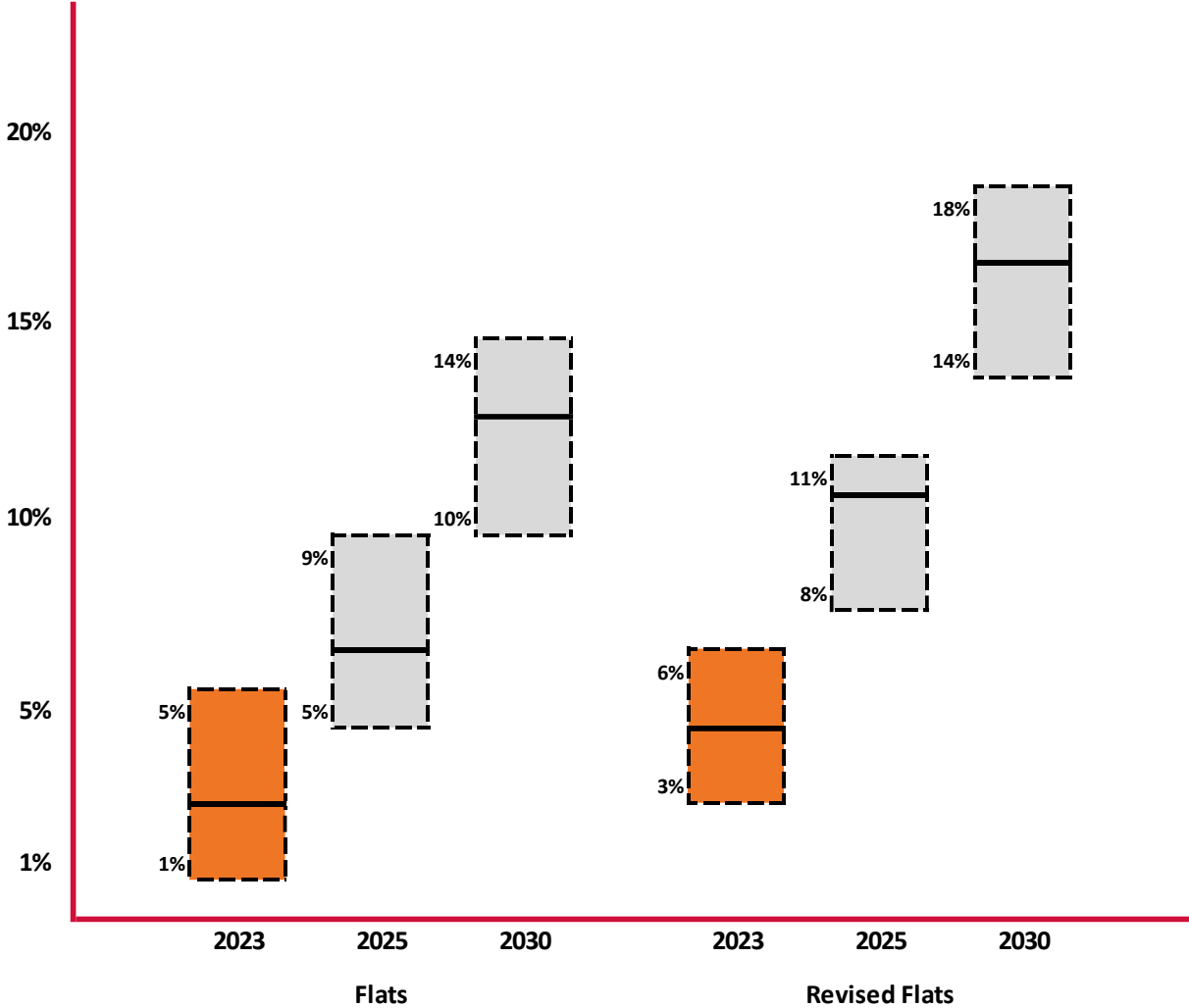
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Following dialogue with the H&L Delivery Board we have developed a secondary analysis of flats (referred to as “periphery” in the main body of this paper). This analysis uses a smaller and less valuable apartment block as its base, with assumed figures used based on a –theoretical development.



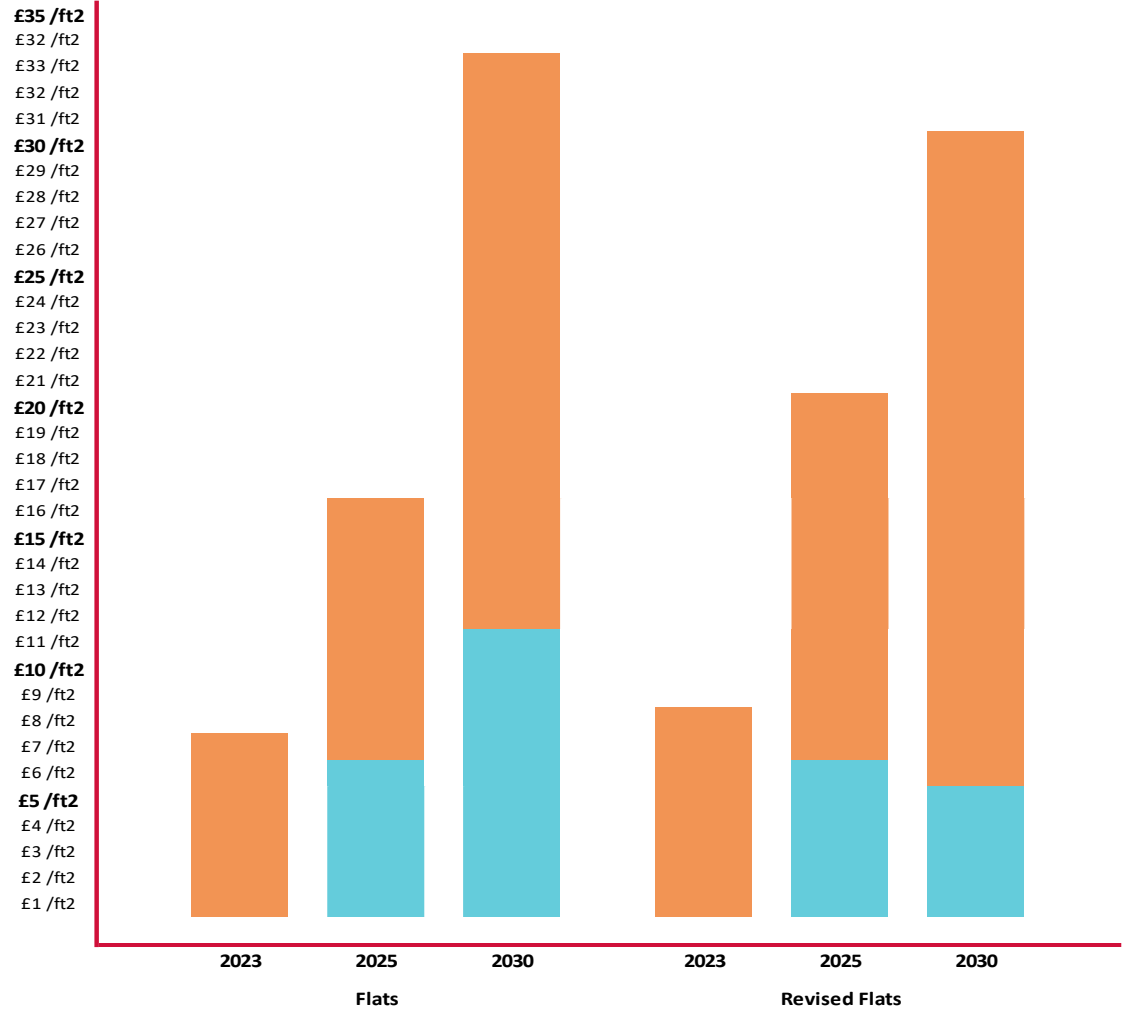
Appendix – Revised Flats – WMCA vs Future Homes

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Appendix – Revised Flats – WMCA vs Future Homes

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A 3D rendering of a city with many grey houses and one red house in the center. The houses are simple, blocky structures with pitched roofs, scattered across a light grey ground. The red house is a single, slightly larger house with a red roof, positioned centrally behind the text.

Homes for the Future – Technical Standard

West Midlands Homes for the Future - Technical Standard - Concept

2030 target scenario - <u>Achieve net zero carbon in construction and in operation</u>	Embodied Carbon	Passive Design	Active Design	Renewables & Net Zero Targets	Construction Strategy	Evidence Required
Energy: <ul style="list-style-type: none"> EUI: <35kWh/m2 operational energy use (including regulated and unregulated energy). Space heating demand of <15KWh/m2/yr Embodied Carbon: <ul style="list-style-type: none"> Embodied carbon calculation to verify target equivalent to <300kgCO2/m2 Construction: <ul style="list-style-type: none"> All developments achieve PMV of 55% 						
2025 target scenario - <u>Achieve net zero carbon in operation</u>						
Energy: <ul style="list-style-type: none"> EUI: <35kWh/m2 operational energy use (including regulated and unregulated energy). Space heating demand: 15-20 KWh/m2/yr Embodied Carbon: <ul style="list-style-type: none"> Embodied carbon calculation to verify target equivalent to <400kgCO2/m2 Construction: <ul style="list-style-type: none"> All developments achieve PMV of 50% 						
2023 Minimum Standard						
Energy: <ul style="list-style-type: none"> EUI: <70kWh/m2 operational energy use (including regulated and unregulated energy). Space heating demand: 15-20KWh/m2/yr Embodied Carbon: <ul style="list-style-type: none"> Embodied carbon calculation to verify target equivalent to <500kgCO2/m2 Construction: <ul style="list-style-type: none"> Preference for 50% PMV Evidence that DfMA process guidance has been adhered to 						
Statutory (plus enhanced measurement & monitoring)						
Energy <ul style="list-style-type: none"> 31% reduction on Dwelling Emission Rate against the Target Emission Rate of Building Regulations Part L 2013. Embodied Carbon <ul style="list-style-type: none"> As a minimum all delivery partners must measure embodied carbon impacts of the proposed construction. Construction <ul style="list-style-type: none"> Review opportunity for PMV uplift across all MMC categories 						

Granular description of how the standards can be achieved

Clearly defined trajectory increasing over time

Definition of the evidence required for funding purposes

West Midlands Homes for the Future: Technical Standard – 2030 target

Commentary & Context

This standard sets the expectation of achieving net zero carbon in construction and operation in 2025. Again pilot projects may achieve this standard sooner, although it will require significant learning and sharing of intelligence about the design and construction solutions that enable this standard to be achieved. It will also require the construction sector and materials supply chain to respond to client demand to achieve this level of performance.

2030 target scenario - Achieve net zero carbon in construction and in operation (in accordance with UKGBC definition).	Embodied Carbon	Passive Design	Active Design
<p>Energy:</p> <ul style="list-style-type: none"> EUI: <35kWh/m² operational energy use (including regulated and unregulated energy). Space heating demand of <15KWh/m²/yr <p>Embodied Carbon:</p> <ul style="list-style-type: none"> Up-front embodied carbon calculation to verify target equivalent to <300kgCO₂/m² (A1-A5). <p>Construction:</p> <ul style="list-style-type: none"> All developments achieve 55% PMV 	<p>To achieve the embodied carbon performance in line with the 2030 targets we anticipate the following design strategies and component choices may be required.</p> <p>Lean design will be prioritised to avoid unnecessary finishes. Designs should be performance-based, and encourage maximum use of materials (e.g., structural design should seek design utilisation factors are no less than 100% with no over-specification permitted).</p> <p>Design for Manufacture and Assembly should be considered to simplify the construction process, reducing material waste where possible. Design considerations to ensure a comprehensive approach to tackling the embodied carbon impacts of each building element:</p> <p>For low rise homes:</p> <ul style="list-style-type: none"> Substructure <ul style="list-style-type: none"> No basement construction Spread foundations with low-carbon concretes (>60% GGBS or equivalent) Superstructure <ul style="list-style-type: none"> Timber frame construction throughout, or significant use of recycled/ secondary components in steel or concrete. <p>For medium scale housing, schemes are likely to require further innovation and commitment, including incorporation and validation of emerging technologies:</p> <ul style="list-style-type: none"> Substructure <ul style="list-style-type: none"> No basements Lean foundation systems, considering raft foundations in lieu of deep piles, where technically feasible, or ultra low-carbon concrete piles where not avoidable. Superstructure <ul style="list-style-type: none"> Lean building design and massing, optimised to reduce structural grids (<5-6m), minimise facade areas/ form factor, avoid excavations. Increase structural floor zones to minimise material (e.g., ribbed slabs in favour of flat slabs). Ultra-low carbon concretes (e.g., using alternative cements/ AACMs etc.) and/or re-used steelwork components. Consideration of structural timber, including engagement with regulatory challenges in Building Regulations Part B. <p>For all building scales and typologies:</p> <ul style="list-style-type: none"> Envelope <ul style="list-style-type: none"> Low-carbon rainscreen cladding systems in timber or reclaimed materials (e.g. recycled PVC window frames or rainscreen cladding) Promote natural and recycled insulation materials, including engagement with regulatory challenges in Building Regulations Part B. Services <ul style="list-style-type: none"> Best practice specifications for heat pump installations with low-GWP refrigerants (e.g.. R32 in place of R410A refrigerants in ASHPs) Careful routing to minimise material use, including distributed servicing systems. Internal Finishes <ul style="list-style-type: none"> Alternative drylining materials with high recycled content (in preference to plasterboards). External Works <ul style="list-style-type: none"> Eliminate bulk earthworks activities with no net export 	<p>To achieve the passive performance in line with the 2030 targets we anticipate the following design strategies and component choices.</p> <p>Exemplary façade performance to be achieved through high performance materials specification and build ups:</p> <ul style="list-style-type: none"> Floor (W/m².K): 0.10 External wall (W/m².K): 0.10 Roof (W/m².K): 0.10 Windows (W/m².K): 0.80 Air permeability (ach): 0.6 Airtightness levels to achieve 0.6 air changes per hour @50Pa. <p>Façade design (Glazing, solar gains and shading)</p> <ul style="list-style-type: none"> Layout and orientation of homes to be considered in context of the wider masterplan site to ensure potential solar gain benefits are achieved. Glazing will be optimised to balance daylight and overheating requirements. This will account for up to 25% glazing ratio in southern elevations to avoid excessive heating demand in winter months whilst reducing the risk of summertime overheating. Specification of triple glazing to limited heat loss and reduce cold draughts. Dwelling design will carefully consider junction details to reduce heat loss and significantly reduce thermal bridges. Potential for a natural ventilation strategy should be explored with priority given to cross ventilation. 	<p>To achieve the operational performance in line with the 2030 targets we would anticipate the building to incorporate the following active systems:</p> <ul style="list-style-type: none"> All electric building services strategy: adopting high efficiency heat pumps specification. Active demand response measures to be considered to reduce peak energy demands and smooth energy consumption, including thermal and battery storage. All electric heating systems to capitalise on the decarbonisation of the UK's electricity grid. Mechanical ventilation with heat recovery (MVHR) including air filtration, improving indoor air quality and reducing dust and allergens: <ul style="list-style-type: none"> MVHR heat recovery efficiency: >75%. MVHR electrical efficiency: <0.45Wh/m². Supplementary heating: Where heating demand is low due to the passive approach, priority will be given to low energy systems that take advantage of post-air heating units within the MVHR ventilation system and/or underfloor heating. Opportunities should also be to explored into the use of direct electric heating. Shower wastewater heat recovery (SWWHR): to reclaim typically 40-60% waste heat from shower water. Automated lighting controls: with daylight and occupancy sensing. Primary energy appliances: Only highly efficient appliances (A rated washing machines, dishwashers etc.) and equipment (fans, pumps, lighting etc.) must be specified.

West Midlands Homes for the Future: Technical Standard – 2030 target (continued)

Commentary & Context

This standard sets the expectation of achieving net zero carbon in construction and operation in 2025. Again pilot projects may achieve this standard sooner, although it will require significant learning and sharing of intelligence about the design and construction solutions that enable this standard to be achieved. It will also require the construction sector and materials supply chain to respond to client demand to achieve this level of performance.

Renewables and Net Zero Targets	Construction Strategy	Evidence Required
<p>Renewables</p> <ul style="list-style-type: none"> • 100% annual energy requirement to be achieved through on-site generation. • Integrate dynamic, smart grid technology to facilitate demand response, ensuring the most efficient supply of electricity for masterplan residents. • Battery storage technology will enhance resilience and optimise use with variable tariffs bringing benefits to consumers into the system (storing solar electricity generated during off-peak, cheaper hours, rather than buying more expensive grid electricity). <p>Energy procurement</p> <ul style="list-style-type: none"> • Ensure mechanisms are in place to enable purchase of 100% renewable energy from credible renewable energy sources. Renewable Energy Certificate's (REC) will be sought to validate the environmental claims of energy suppliers. <p>Net zero verification</p> <ul style="list-style-type: none"> • Verification process to be carried out following the UKGBC guidance for net zero carbon verification. A minimum level of reporting of the buildings operational and construction performance and third-party audit of data will be required. 	<p>A minimum of 55% PMV is required and the guidance document (to be developed) will specify the typical combinations of solutions that will achieve this.</p> <p>Selection decisions for MMC suppliers will be based in part on intelligence gathered through the operation of this standard in the years leading up to the 2030 standard being implemented. This will focus on the as-built and verified performance data gathered through earlier delivery projects.</p> <p>PMV targets will be established at the outset, alongside a commitment to DfMA principles and digitally enabled design and data capture approaches.</p> <p>PMV will be estimated at the design stage and validated post-completion.</p>	<p>The following evidence should be provided to demonstrate compliance with the target:</p> <p><u>Planning</u></p> <ul style="list-style-type: none"> • Whole life carbon analysis to be carried out to estimate the predicted whole life carbon impacts of development in accordance with RICS Whole life carbon assessment for the built environment methodology. Evidence of optioneering to be carried out prior to planning to ensure an optimised construction solution is taken forward. Analysis should be undertaken using BREEAM compliant LCA tools with Environmental Product Declarations for key components. This requires designs to be sufficiently developed (RIBA Stage 3) to support an elemental bill of quantities assessment or a condition to undertake this through reserved matters. • Passivhaus Planning Package (PHPP) modelling to be carried out to ensure significantly reduced thermal bridges. • Design statement to demonstrate optimised approach including confirmation of structural utilisation factors. • Energy modelling to be carried out to verify as designed energy performance. This will include operational energy calculations designed to close the 'performance gap' associated with Building Regulations compliance calculations (e.g.. following CIBSE's TM54 Evaluating operational energy use at the design stage or Passivhaus PHPP methodology as a best practice) to calculate overall energy use intensity (EUI). • Undertake comprehensive overheating analysis of all habitable spaces across the scheme to ensure high levels of occupant comfort are achieved (e.g.. following CIBSE TM59 methodology for the overheating risk in homes). • BRE Home Quality Mark (HQM) assessment. HQM measures the quality and sustainable value considering running costs, health and wellbeing, and environmental footprint. HQM assessment is carried out a numerous stages of the design process by an independent assessor to demonstrate high-quality homes within the marketplace. • Commitments to technologies and evidence of design strategies should be provided. <p><u>Design verification</u></p> <ul style="list-style-type: none"> • Planning stage design statement should be submitted to verify that design development is in accordance with planning stage carbon statements and confirm proposals remain on track to meet their planning targets. <p><u>Construction</u></p> <ul style="list-style-type: none"> • Air tightness testing to be carried at construction stages to verify building airtightness against the strict targets required to achieve the low energy ambitions. • Construction stage verification of operational and embodied carbon performance and tracking any changes made, especially material or technology choices, and including site emissions of fuels/ power/ waste. <p><u>Post-occupancy</u></p> <ul style="list-style-type: none"> • POE verification on the buildings operational performance will be carried out to ensure a positive feedback loop to support future project delivery. POE evidence will include in-use energy consumption data and user satisfaction feedback. • All developments to have in place a recognised monitoring regime to assess energy use, indoor air quality and risk of overheating. • Energy use guidance to be provided to all residents to support reduced operational energy of all electrical equipment, including supplementary lighting. <p><u>DfMA & PMV</u></p> <ul style="list-style-type: none"> • DfMA and PMV reviews undertaken at key design stages • Verification of 55% PMV both in design and at completion

West Midlands Homes for the Future: Technical Standard – 2025 target

Commentary & Context

This standard sets the expectation of achieving net zero carbon in operation in 2025. Pilot projects will likely achieve this standard sooner, and it will replace the current minimum standard in 2025.

2025 target scenario - Achieve net zero carbon in operation (in accordance with UKGBC definition).	Embodied Carbon	Passive Design	Active Design
<p>Energy:</p> <ul style="list-style-type: none"> EUI: <35kWh/m2 operational energy use (including regulated and unregulated energy). Space heating demand:15-20 KWh/m2/yr <p>Embodied Carbon</p> <ul style="list-style-type: none"> Up-front embodied carbon calculation to verify target equivalent to <400kgCO2/m2 (A1-A5). <p>Construction:</p> <ul style="list-style-type: none"> All developments achieve PMV of 50% 	<p>To demonstrate embodied carbon performance in line with the 2025 targets we anticipate designs will need to prioritise the following key construction items as a minimum:</p> <p>For low-rise housing (<11m):</p> <ul style="list-style-type: none"> Substructure -Incorporation of low carbon spread foundations (where technically feasible). Superstructure- Lightweight construction (e.g.. timber or light gauge steel construction systems), or exemplar low-concrete specifications for in-situ or precast concrete systems. <p>For medium scale housing, requiring further innovation and commitment:</p> <ul style="list-style-type: none"> Massing- Careful planning to minimise building envelope. Podium construction (e.g.. with ground level parking) should be avoided where possible, and basement construction is unlikely to be feasible without significant commitment to low-carbon construction methods. Substructure - Lean foundation systems, considering raft foundations in lieu of deep piles, where technically feasible, or low-carbon concrete piles where not avoidable. Superstructure - Exemplar low carbon concretes (>65% GGBS or equivalent) or high recycled content (Electric Arc Furnace) structural steelwork, where used <p>For all building scales and typologies:</p> <ul style="list-style-type: none"> Envelope <ul style="list-style-type: none"> Lightweight facade systems (avoiding solid brick or pre-cast systems) Composite, timber or recycled plastic window framing (in preference to aluminum or PVC windows). Avoid plastic insulation products to roofs/facades, with mineral wool or natural insulation materials preferred. Internal Finishes <ul style="list-style-type: none"> Avoid internal finishes where possible, promoting 'fair-faced' elements where possible, and prioritise natural or recycled finishes (e.g.. avoid plastic floors/ carpets and minimise plasterboard quantities where possible) Services <ul style="list-style-type: none"> Best practice specifications for heat pump installations with low-GWP refrigerants (e.g.. R32 in place of R410A refrigerants in ASHPs) External Works <ul style="list-style-type: none"> Careful specification of external works materials, promoting permeable surfaces and recycled surfacing in preference to asphalt or poured concrete surfacing. 	<p>We anticipate the following passive design strategies and component choices to meet the 2025 targets:</p> <p>Fabric specification</p> <ul style="list-style-type: none"> Exemplary façade performance to be achieved through high performance materials specification and build ups: <ul style="list-style-type: none"> Floor (W/m2.K): 0.11 External wall (W/m2.K): 0.15 Roof (W/m2.K): 0.11 Windows (W/m2.K): 0.80 Air permeability (ach): 0.6 Dwelling design will carefully consider junction details to reduce heat loss and significantly reduce thermal bridges. <p>Airtightness</p> <ul style="list-style-type: none"> Airtightness levels to achieve 0.6 air changes per hour @50Pa. This will be achieved through rigorous standards in practice from good design to construction. <p>Façade design (Glazing, solar gains and shading)</p> <ul style="list-style-type: none"> Specification of triple glazing to limited heat loss and reduce cold draughts. Layout and orientation of homes to be considered in context of the wider masterplan site to ensure potential solar gain benefits are achieved. Glazing will be optimised to balance daylight and overheating requirements. This will account for up to 25% glazing ratio in southern elevations to avoid excessive heating demand in winter months whilst reducing the risk of summertime overheating. Potential for a natural ventilation strategy should be explored with priority given to cross ventilation. 	<p>To achieve operational energy performance in line with the 2025 targets we would anticipate the building to incorporate the following active systems:</p> <ul style="list-style-type: none"> All electric building services strategy adopting high efficiency heat pump technology. Mechanical ventilation with heat recovery (MVHR) including air filtration, improving indoor air quality and reducing dust and allergens: <ul style="list-style-type: none"> MVHR heat recovery efficiency: >75%. MVHR electrical efficiency: <0.45Wh/m2. Supplementary heating: Where heating demand is low due to the passive approach, priority will be given to low energy systems that take advantage of post-air heating units within the MVHR ventilation system and/or underfloor heating. Opportunities should also be explored into the use of direct electric heating. Shower wastewater heat recovery (SWWHR) to reclaim typically 40-60% waste heat from shower water. Automated lighting controls with daylight and occupancy sensing. Primary energy appliances: Only highly efficient appliances (A rated washing machines, dishwashers etc.) and equipment (fans, pumps, lighting etc.) must be specified.

West Midlands Homes for the Future: Technical Standard – 2025 target (continued)

Commentary & Context

This standard sets the expectation of achieving net zero carbon in operation in 2025. Pilot projects will likely achieve this standard sooner, and it will replace the current minimum standard in 2025.

Renewables and Net Zero Targets	Construction Strategy	Evidence Required
<p>Renewables</p> <ul style="list-style-type: none"> Optimise the use of on-site renewable generation (15m2 PV/dwelling, 2.5m2/apartment). Build additional resilience into the system through the introduction of battery storage technology at both masterplan and plot level. Consumers can store solar electricity they have generated during off-peak, cheaper hours, rather than buying more expensive grid electricity. <p>Energy procurement</p> <ul style="list-style-type: none"> Ensure mechanisms are in place to enable purchase of 100% renewable energy from credible renewable energy sources. Renewable Energy Certificate's (REC) will be sought to validate the environmental claims of energy suppliers. <p>Net Zero verification</p> <p>Verification process to be carried out following the UKGBC guidance for net zero carbon verification. A minimum level of reporting of the buildings' operational performance.</p>	<p>A minimum of 50% PMV is required and the guidance document (to be developed) will specify the typical combinations of solutions that will achieve this.</p> <p>Developers should seek higher performing MMC solutions especially in relation to fabric efficiency to enable net zero homes in operation, but should also prioritise suppliers that can substantiate enhanced embodied carbon performance.</p> <p>PMV targets should be established at the outset, alongside a commitment to DfMA principles and likely digitally enabled design and data capture approaches.</p> <p>PMV should be estimated at the design stage and validated post-completion. Data on PMV performance should be shared alongside carbon performance to enable continuous learning and improvement at a system-wide level.</p>	<p><u>Planning</u></p> <ul style="list-style-type: none"> Whole life carbon analysis to be carried out to estimate the predicted whole life carbon impacts of development in accordance with RICS Whole life carbon assessment for the built environment methodology. Evidence of optioneering to be carried out prior to planning to ensure an optimised construction solution is taken forward. Analysis should be undertaken using BREEAM compliant LCA tools with Environmental Product Declarations for key components. This requires designs to be sufficiently developed (RIBA Stage 3) to support an elemental bill of quantities assessment or a condition to undertake this through reserved matters. Passivhaus Planning Package (PHPP) modelling to be carried out to ensure significantly reduced thermal bridges. Energy modelling to be carried out to verify as designed energy performance. This will include operational energy calculations designed to close the 'performance gap' associated with Building Regulations compliance calculations (e.g., following CIBSE's TM54 Evaluating operational energy use at the design stage or Passivhaus PHPP methodology as a best practice) to calculate overall energy use intensity (EUI). Undertake comprehensive overheating analysis of all habitable spaces across the scheme to ensure high levels of occupant comfort are achieved (e.g., following CIBSE TM59 methodology for the overheating risk in homes). <p><u>Design verification</u></p> <ul style="list-style-type: none"> Planning stage studies to be verified against design updates to ensure proposals remain on track to meet their planning targets. <p><u>Construction</u></p> <ul style="list-style-type: none"> Air tightness testing to be carried at construction stages to verify building airtightness against the strict targets required to achieve the low energy ambitions. <p><u>Post-occupancy</u></p> <ul style="list-style-type: none"> POE verification on the buildings operational performance will be carried out to ensure a positive feedback loop to support future project delivery. POE evidence will include in-use energy consumption data and user satisfaction feedback. Energy use guidance to be provided to all residents to support reduced operational energy of all electrical equipment, including supplementary lighting <p><u>DfMA & PMV</u></p> <ul style="list-style-type: none"> DfMA and PMV reviews undertaken at key design stages Verification of 50% PMV both in design and at completion

West Midlands Homes for the Future: Technical Standard – 2023 Minimum Standard

Commentary & Context

This is the proposed target standard for developers in WMCA to achieve in 2023. It is a challenging but achievable standard, which requires a better fabric performance than the Future Homes Standards combined with a focus on reducing embodied carbon and a pragmatic utilisation of MMC focussed principally on structural solutions. The energy and embodied carbon targets align with the WMCA Net Zero Carbon Roadmap. The MMC trajectory is a simplified yet more ambitious version of the Homes England requirement for MMC, requiring at the very least an enhanced MMC framing solution combined with other pre-manufactured elements.

2023 Minimum Standard	Embodied Carbon	Passive Design	Active Design	Renewables and Net Zero Targets	Construction Strategy	Evidence Required
<p>Energy:</p> <ul style="list-style-type: none"> • EU1: <70kWh/m2 operational energy use (including regulated and unregulated energy). • Space heating demand: 15-20KWh/m2/yr <p>Embodied Carbon</p> <ul style="list-style-type: none"> • Embodied carbon calculation to verify target equivalent to <500kgCO2/m2 <p>Construction:</p> <ul style="list-style-type: none"> • Evidence for 50% PMV • Evidence that DfMA process guidance has been adhered to 	<p>To achieve the embodied carbon performance in line with the minimum targets an assessment will be undertaken, and the selection of the following design strategies and components should be considered. Particular care will be needed to embed low-carbon materials and design features in taller buildings > 11m in height or with challenging ground conditions:</p> <ul style="list-style-type: none"> • Substructure <ul style="list-style-type: none"> ○ No basements. ○ Standard building foundation design with low carbon concrete, avoiding unnecessary mass fill. • Superstructure <ul style="list-style-type: none"> ○ Efficient building grid systems with typical structural spans <8m. ○ Avoidance of complex and carbon intensive design features (e.g., deep basements, long-span transfer structures) ○ Traditional construction materials (steel, concrete, masonry) will require good practice specifications to promote local supply chains, low carbon specifications (e.g., higher %age cement replacement in concretes). • Services <ul style="list-style-type: none"> ○ Good practice specifications for heat pump installations with low-GWP refrigerants (e.g., R32 in place of R410A refrigerants in ASHPs) • Envelope <ul style="list-style-type: none"> ○ Avoid heavyweight cladding systems (in pre-cast or aluminum unclad cladding). 	<p>We anticipate the following passive design strategies and component choices to meet the 2025 targets:</p> <p>Fabric specification</p> <ul style="list-style-type: none"> • Fabric performance will go beyond current building regulation compliance standards. We would expect design to prioritise materials and build-ups as such: <ul style="list-style-type: none"> ○ Floor (W/m2.K): 0.11 ○ External wall (W/m2.K): 0.15 ○ Roof (W/m2.K): 0.11 ○ Windows (W/m2.K): 0.80 ○ Air permeability (m3/(h.m2)): 5.0 <p>Façade design (Glazing, solar gains and shading)</p> <ul style="list-style-type: none"> • Layout and orientation of homes to be considered in context of the wider masterplan site to ensure potential solar gain benefits are achieved. • Glazing will be optimised to balance daylight and overheating requirements. This will account for up to 25% glazing ratio in southern elevations to avoid excessive heating demand in winter months whilst reducing the risk of summertime overheating. • Potential for a natural ventilation strategy should be explored with priority given to cross ventilation. 	<p>To achieve operational energy performance in line with minimum targets we would anticipate the building to incorporate the following active systems:</p> <ul style="list-style-type: none"> • All electric building services strategy adopting high efficiency heat pump technology. • Mechanical ventilation with heat recovery (MVHR) including air filtration, improving indoor air quality and reducing dust and allergens: <ul style="list-style-type: none"> ○ MVHR heat recovery efficiency: >75%. ○ MVHR electrical efficiency: <0.45Wh/m2. • Supplementary heating: Where heating demand is low due to the passive approach, priority will be given to low energy systems that take advantage of post-air heating units within the MVHR ventilation system and/or underfloor heating. Opportunities should also be explored into the use of direct electric heating. • Automated lighting controls with daylight and occupancy sensing. 	<p>Renewables</p> <ul style="list-style-type: none"> • Optimise on-site renewable generation. • Build additional resilience into the system through the introduction of battery storage technology at both masterplan and plot level. Consumers can store solar electricity they have generated during off-peak, cheaper hours, rather than buying more expensive grid electricity. <p>Energy procurement</p> <ul style="list-style-type: none"> • Ensure mechanisms are in place to enable purchase of 100% renewable energy from credible renewable energy sources. Renewable Energy Certificate's (REC) will be sought to validate the environmental claims of energy suppliers. 	<p>MMC will be critical to achieving the enhanced embodied carbon and fabric performance expectations set out on the left.</p> <p>The design process should accommodate informed reviews of construction methodology and material selection, with a focus on optimising PMV.</p> <p>An MMC strategy that achieves a PMV of 50% is likely to require either a category one 3d volumetric solution or alternatively a combination of a range of all other categories (2-6) especially utilising a 2d frame (cat 2) with pre-manufactured components such as pre-manufactured bathroom and utility pods.</p> <p>To achieve this the design process should adopt DfMA principles in line with the MMC guidance (note: to be developed) along with early supply chain engagement and structured PMV reviews at key design stages.</p>	<p><u>Planning</u></p> <ul style="list-style-type: none"> • Whole life carbon analysis to be carried out to estimate the predicted whole life carbon impacts of development in accordance with RICS Whole life carbon assessment for the built environment methodology. Evidence of optioneering to be carried out prior to planning to ensure an optimised construction solution is taken forward. Analysis should be undertaken using BREEAM compliant LCA tools with Environmental Product Declarations for key components. This requires designs to be sufficiently developed (RIBA Stage 3) to support an elemental bill of quantities assessment or a condition to undertake this through reserved matters. • Overheating analysis to be undertaken for all habitable spaces across the scheme to ensure high levels of occupant comfort are achieved (e.g., following CIBSE TM59 Design methodology for the overheating risk in homes). <p><u>Design verification</u></p> <ul style="list-style-type: none"> • Planning stage studies to be verified against design updates to ensure proposals remain on track to meet their planning targets. <p><u>Post-occupancy</u></p> <ul style="list-style-type: none"> • The effectiveness of measures will be reviewed as part of the post completion works to ensure as-designed <p><u>Construction:</u></p> <ul style="list-style-type: none"> • PMV estimate pre-construction and verification on completion, or • Verification of DfMA process adherence per guidance document (to be developed)

West Midlands Homes for the Future: Technical Standard – “Statutory Plus” Requirement

Commentary & Context

A “statutory (plus enhanced measurement & monitoring)” standard has been developed to enable the incremental implementation of the 2023 minimum standard. It is certain to be the case that developments will come forward that are at an advanced design stage and are therefore limited in the extent to which an enhanced specification can be deployed. The statutory plus standard will respond in those cases by requiring additional considerations of developers, such as a requirement to measure both whole life carbon and PMV assessments before and after completion. This is intended to drive up understanding of the core issues, solutions for enhanced performance, and ensure that as a minimum all developments start to consider the steps that will be mandatory in future.

Statutory (plus enhanced measurement & monitoring)	Embodied Carbon	Passive Design	Active Design	Renewables and Net Zero Targets	Construction Strategy	Evidence Required
<p>Energy</p> <ul style="list-style-type: none"> 31% reduction on Dwelling Emission Rate against the Target Emission Rate of Building Regulations Part L 2013. <p>Embodied Carbon</p> <ul style="list-style-type: none"> As a minimum all delivery partners must measure embodied carbon impacts of the proposed construction. <p>Construction</p> <ul style="list-style-type: none"> Review opportunity for PMV uplift across all MMC categories 	<p>To demonstrate performance in line with requirements set out under the Statutory Plus target, we anticipate the following as a minimum:</p> <ul style="list-style-type: none"> Design stage lifecycle assessment of embodied carbon in accordance with BS EN 15978 and in the built environment. Reporting standards should be aligned with relevant industry guidance at the time of assessment (RICS Professional Statement for Whole Life Carbon Assessment) <p>Key reporting standards from 2023:</p> <ul style="list-style-type: none"> Assessment to include all works elements (including services, FFE, internal finishes, external works) and min., 95% of building elements as measured by cost, with the exception of on-site renewables and associated infrastructure (e.g.. battery storage), which should be reported separately. Generic values may be used for non-fixed elements (FFE) where no data available. 'Up-front' carbon reporting (life-cycle modules A1-A5) should exclude sequestration (e.g., in timber materials). 	<p>The following passive design strategies meet the Statutory Plus performance requirements:</p> <ul style="list-style-type: none"> At masterplan-level, priority will be given to higher density accommodation for its improved form factor and associated reductions in heat loss and overall improved massing efficiency. Design of dwellings will go beyond current building regulation fabric performance standards. Therefore, we would expect dwellings to target the following fabric performance as a minimum: <ul style="list-style-type: none"> Floor (W/m2.K): 0.13 External wall (W/m2.K): 0.18 Roof (W/m2.K): 0.13 Windows (W/m2.K): 1.40 Air permeability (m3/(h.m2): 5.00 	<p>To achieve operational performance in line with the statutory plus target we anticipate the design to consider the following key features as a minimum:</p> <ul style="list-style-type: none"> Commitment to no new gas installations across the entire masterplan. A low zero carbon feasibility study will be used to identify the key measures for implementation at both a site-wide masterplan level and building level. 	<p><u>Renewables</u></p> <ul style="list-style-type: none"> Maximise on-site renewable energy generation irrespective of whether carbon reduction targets are already met. Roof-top solar PV should be optimised across the site. 	<p>The design process should accommodate an informed reviews of construction methodology and material selection, with a focus on optimising PMV.</p> <p>PMV should be estimated at the design stage, updated to reflect which MMC options have been selected, and subsequently re-measured post-completion.</p>	<p><u>Planning</u></p> <ul style="list-style-type: none"> Building Regulations compliance modelling to be carried out to verify as-designed energy and carbon performance against target reductions. Overheating analysis to be undertaken for all habitable spaces across the scheme to ensure high levels of occupant comfort are achieved (e.g.. following CIBSE TM59 Design methodology for the overheating risk in homes). Elemental life cycle analysis to be carried out establish the embodied carbon impact of the development. <p><u>Design verification</u></p> <ul style="list-style-type: none"> Planning stage studies to be verified against design updates to ensure proposals remain on track to meet their planning targets. <p><u>DfMA & PMV</u></p> <ul style="list-style-type: none"> PMV estimate at design stage and updated PMV following MMC options review. Output of MMC options review Verification of outturn PMV and MMC solutions deployed

The background of the slide is a light gray surface covered with numerous 3D models of houses. Most of these models are a uniform light gray color. One house model, positioned centrally behind the text, is a distinct dark red color, making it stand out from the others. The houses are scattered across the surface, some appearing larger and more prominent than others, creating a sense of depth and a community or neighborhood theme.

Homes for the Future –Wider Considerations for the Promotion of Sustainable Placemaking

Mobility & Accessibility

Commentary & Context

The following pages set out a series of wider recommended principles that are intended to guide sustainable development at a project level and to inform wider placemaking. The principles are organised into themes, the first of which relates to **Mobility & Accessibility**

Site Selection	Masterplan	Homes	Operation
<p>• Sites for housing should be located in close proximity to existing public transport and local amenities and local services.</p>	<p>Aspire to car free development by:</p> <ul style="list-style-type: none"> • Providing local services based on a principles of 5 minute neighbourhood/15 minute city. Provision should be informed by a local needs assessment and community engagement to ensure the broad ranging community needs are adequately addressed. • Prioritising active travel modes catering for a wide range of mobility needs. • Support shared mobility services such as rapid bus/light rail, car clubs and bike clubs. • Mobility hubs to be considered for site-wide integration on mobility services including car clubs and communal on-street cycle storage. • Consolidating logistics movements to reduce transport emissions and improve overall efficiency. • Future proof development, avoiding predict and provide models, envisaging the future mobility and transition taking account of trends and changing patterns in demand. • Infrastructure to be designed with inclusivity in mind. Include the specification of dropped curbs / level pavements and roadways to enable wheelchair and buggy use, as well as the provision of good street lighting so residents feel safe walking or cycling after dark. • Speed limits set across the masterplan and in particular in denser residential areas to promote inclusivity and sustainable travel options. This should look to integrate with school streets initiative to improve safety for children. • Cycle storage needs to support a range of bike types for all stages of life - cargo bikes for families through to mobility scooters. Inclusive design must ensure that those with additional needs and disabilities are also catered for. 	<ul style="list-style-type: none"> • Incorporate secure cycle storage within all dwellings. • Actively promote local carsharing services amongst residents, designed to serve clusters of dwellings. • Design for ease of access and mobility for all users to ensure inclusive spaces across the scheme. 	<ul style="list-style-type: none"> • As part of wider Post Occupancy Evaluation (POE), engagement with residents will be used to evaluate mobility and accessibility performance. Assessment will address both masterplan and dwelling-level ease of access and mobility. Findings will be used to support potential future enhancements of the masterplan.

Resilient Ecosystems

Commentary & Context

These pages set out a series of wider recommended principles that are intended to guide sustainable development at a project level and to inform wider placemaking. The principles are organised into themes, and this page sets out the principles related to **Resilient Ecosystems**

Site Selection	Masterplan	Homes	Operation
<p>• Prioritise the use of brownfield sites to ensure masterplans do not accelerate the expansion into greenbelt land and the associated ecological impact this has.</p> <p>• Prioritise sites that have limited vulnerability to climate hazards, and avoid sites that are at risk of flooding taking account of future climate scenarios.</p> <p>Page 91</p>	<ul style="list-style-type: none"> • All development sites should ensure a Climate Change Risk Assessment is carried out to identify the potential future risks and establish mitigation responses. • Grey infrastructure should be limited, through optimisation of street layouts, giving space over to landscape and biodiversity. • A 10% biodiversity net gain on all sites and Urban Greening Factor of 0.3 for brownfield sites should be targeted as a minimum. • Prioritise nature based solutions for managing surface water, and avoid plastic attenuation tanks. • Nature based solutions will be pursued to mitigate the increased frequency of overheating events associated with climate change. Shading will be provide via green infrastructure and tree canopy. 	<ul style="list-style-type: none"> • Prioritise space for home growing. Where denser living is specified as part of masterplan, provide community gardens and growing spaces. • Minimise water consumption to 80l/p/d. 	<ul style="list-style-type: none"> • Community stewardship initiatives should be sought to help foster community engagement activities such maintenance of allotments/outdoor space. • Community engagement with ecosystems monitoring to ensure the value and enhancement of greenspace over the long term.

West Midlands Homes for the Future: "Wider Standards for Sustainable Placemaking" - Well-Being & Inclusion

Commentary & Context

These pages set out a series of wider recommended principles that are intended to guide sustainable development at a project level and to inform wider placemaking. The principles are organised into themes, and this page sets out the principles related to **Well-Being & Inclusion**

Site Selection	Masterplan	Homes	Operation
<ul style="list-style-type: none"> Choose sites that are near to existing services and community facilities. Understand key site characteristics including microclimate and air quality. 	<ul style="list-style-type: none"> Undertake early stage microclimate modelling (daylight, sunlight, wind) to inform massing and orientation studies (commence at RIBA 2) and implement mitigation measures. Ensure healthy streets and permeability as part of the design to encourage play and culture for all residents. Ensure sufficient provision of green space for play, events, reflection and exercise. This includes both public and private access to outdoor space such as parks and green space within close proximity. Community infrastructure to be provided based on local needs assessment and community engagement. Ensure efficient use of land to achieve social impact greater. Develop a Social Value Strategy which places development in context of regional ambitions including regeneration, skills, delivery of new homes and careers within the green economy. Provision of green space needs to consider both quality and quantity. Spaces should be accessible to diverse user groups. 	<ul style="list-style-type: none"> Daylight and sunlight studies: Undertaken in accordance with the latest BRE209 guidance. Home design to ensure exemplar levels of daylight are achieved, providing the best possible occupant experience. Overheating mitigation: Ensure the risks associated with overheating and poor thermal comfort are addressed through comprehensive thermal modelling (e.g. following CIBSE TM59 Design methodology for the overheating risk in homes). Space for the every day stuff – drying, etc. 	<ul style="list-style-type: none"> Facilitate ongoing engagement through community events, activities and engagements programmed into the operation of the development to support community well being and sense of belonging. Identify opportunities for community stewardship of key facilities. Post Occupancy Evaluation (POE) to be carried to capture feedback on resident wellbeing and place performance. Ensure mechanisms are in place to implement improvements.

Circular Economy

Commentary & Context

These pages set out a series of wider recommended principles that are intended to guide sustainable development at a project level and to inform wider placemaking. The principles are organised into themes, the last of which relates to **Circular Economy**

Site Selection	Masterplan	Homes	Operation
<ul style="list-style-type: none"> • Prioritise the selection of sites in proximity to developed urban areas to reduce transport/travel emissions and enable connection to existing modes of low carbon travel. • Encourage the development of sites where there are opportunities for reuse of existing buildings and infrastructure. 	<ul style="list-style-type: none"> • Ensure passive principles inform the masterplan design including solar analysis to inform massing optimisation. • Ensure masterplan layout responds to site topography to minimise earthworks movements. • Measure and reduce infrastructure and public realm carbon in accordance with PAS 2080. • Consider the incorporation of a 5th generation energy networks to facilitate energy exchange between buildings on the masterplan. • Review potential for onsite solar array. 	<ul style="list-style-type: none"> • New homes to achieve aspire to achieving the 2030 target scenario. Refer to the Carbon Standard. • Design homes to facilitate future disassembly, adaptability and reuse in line with circular economy principles, adopting buildings as materials banks principles. • Design homes to incorporate recycled/secondary materials. • Co-benefits and wider supply chain issues should be considered as part of the materials specification and responsible sourcing process. 	<ul style="list-style-type: none"> • Soft landings approach to be pursued through a recognised performance gap tool. Tool will be used to minimise gap between design aspirations and the completed development. • Develop a Home User Guide to support home owners and tenants. As per a soft landings approach ensure a handover pack/Building User Guide for all building occupants to ensure all occupants have a sufficient understanding of the building systems operations to help improve their energy efficiency, reducing associated energy costs. • Facilitate reuse and sharing of products and spaces across the scheme through shared community spaces resource hubs, shared mobility. • Encourage on site recycling and composting of green waste.

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