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| Committee(s): Planning & Transport Committee | Dated: 05/03/2024 |
| Subject: Report – ‘Refurbishing the City – insights from current best practice’ | Public |
| Which outcomes in the City Corporation’s Corporate Plan does this proposal aim to impact directly? | 4. Communities are cohesive and have the facilities they need. 5. Businesses are trusted and are socially and environmentally responsible. 10. We inspire enterprise, excellence, creativity and collaboration. 11. We have clean air, land and water and a thriving and sustainable natural environment. |
| Does this proposal require extra revenue and/or capital spending? | N |
| If so, how much? | N/A |
| What is the source of Funding? | N/A |
| Has this Funding Source been agreed with the Chamberlain’s Department? | N/A |
| Report of: Director for the Environment | For Decision |
| Report author: Aled Thomas, Department for the Environment | |

Summary

The ‘Refurbishing the City – insights from current best practice’ report is one of the actions in the Climate Action Strategy’s Square Mile project plan for 2023/24. It draws together evidence of current policy and practice in the refurbishment and retrofit of commercial buildings in the City, London and beyond.

The report includes a portfolio of case studies which provide a summary of innovative refurbishment schemes and their carbon performance. The report draws on these case studies to provide practice-based recommendations for the built environment sector, setting out key insights, risks and opportunities. The report also sets current refurbishment practices within existing and emerging policy and industry frameworks for reducing whole lifecycle carbon in the built environment.

It is a further contribution towards understanding the role building refurbishment can play in reducing carbon emissions as well as providing wider economic and social value. The intention is to publish the report and to promote it through relevant networks and a dedicated event. It will inform on-going work related to planning policy and guidance, notably the ‘Planning for Sustainability’ Supplementary Planning

Document which was approved by committee for consultation in December 2023 and the new City Plan 2040.

Recommendation(s)

Members are asked to:

- Approve the report for publication
- Note the intention to develop a series of Square Mile refurbishment case studies, drawing on the template set out in the attached documents.
- Note the proposal to share and discuss the finding through a dedicated event.

Main Report

Background

1. The City Corporation's Climate Action Strategy has set an ambition of a net-zero Square Mile by 2040. A key aspect of achieving this goal is to better understand the whole lifecycle carbon impact of building refurbishment and retrofit, particularly for commercial buildings.
2. Commercial offices in the UK account for circa 11% of energy consumption from non-domestic buildings. While only 7% of non-domestic buildings are over 1000 sqm in size, these large buildings account for over half of all total energy consumption. Decarbonising large buildings will, therefore, have a more significant impact on total energy consumption per building retrofitted.
3. The '**Refurbishing the City – insights from current best practice**' report is one of the actions in the Climate Action Strategy and draws together current policy and practice in the refurbishment and retrofit of commercial buildings in the City, London and beyond. It builds a substantial evidence base to support key stakeholders across the construction industry to develop their own business case for retrofit and refurbishment.
4. This shift towards retention of buildings or building elements is increasingly evident in the construction sector. Landlords, developers, tenants and investors are adopting their own ambitious sustainability goals which are shaping their decisions. Deloitte's Winter 2023 Crane Survey reported that the volume of new starts (470,000 sqm), was the highest seen across the seven central London submarkets since 2005. Of the new starts, 65% (306,000 sqm) were refurbishments, the highest on record. These trends are supported by a policy and regulatory framework which increasingly encourages the retrofitting of existing buildings, such as the 'Retrofit First' policy set out in the new City Plan 2040.
5. The report has produced 18 case studies of leading refurbishment schemes. Most of the case studies are from the City of London and other London boroughs with a few additional examples from other parts of the UK and beyond. The schemes

themselves range across different typologies, buildings size, time periods and locations, to provide a rich evidence-base of current best practice.

6. Each case study provides a deep-dive into key aspects of the scheme - the refurbishment work undertaken; scope of the works; retained elements; key carbon performance data; building certification; and key insights into the opportunities and challenges of each development.
7. The report draws on these case studies to provide practice-based recommendations for the built environment sector, setting out key insights, risks and opportunities. The report also places current refurbishment practice within existing and emerging policy and industry frameworks for reducing whole lifecycle carbon in the built environment.

Current Position

Case studies and key insights

8. From a 'carbon' perspective, the case studies demonstrate that retrofit and refurbishment often result in lower whole-life carbon emissions when compared to a new build equivalent and are a key lower carbon solution to meet our climate goals.
9. The carbon performance of the case studies was also compared to voluntary industry benchmarks. As set out in Table 1 below, 8 of the projects are currently in line with the LETI 2030 metric for upfront carbon. Given several of the projects have had little to no structural intervention, the case studies illustrate how challenging these metrics are to achieve. 10 projects perform in line with RIBA benchmark Challenge 2025, and the remaining 7 fall within RIBA benchmark Challenge 2030. Whilst these metrics are voluntary, the case studies do reflect how current practice compares against emerging industry ambitions.

Table 1: Summary of Carbon Performance data of Case Studies

| Total Case Study Projects: 18 Total with A1-A5 (upfront carbon) provided: 15 Total with A1-A5, B1-B5, C1-C4 life cycle embodied carbon provided: 13 | Metric (kgCO _{2e} /m ² /GIA) | Number achieving LETI / RIBA 'Metric'* |
|--|---|---|
| LETI 2020 (Band C) (A1-A5) | 600 | 12 |
| LETI 2030 (Band A) (A1-A5) | 350 | 8 |
| RIBA 2030 Challenge 2025 (A1-A5, B1-B5, C1-C4) | 970 | 10 |
| RIBA 2030 Challenge 2030 (A1-A5, B1-B5, C1-C4) | 750 | 7 |

*at the current time and based on information provided relative to project stage.

10. In terms of carbon from energy in use, it is more challenging to compare projects with accuracy. This is due to the methods used from evaluating operational energy

in the design and construction phases. Most case studies have carried out estimations or are in earlier stages based of NABERS Energy for Offices rating.

11. While the data related to building and carbon performance is difficult to compare on a like-to-like basis, the case studies show that data, evaluation and transparency is improving over time. Key metrics are now being collected at all stages of development which is key for any assessment and learning.
12. Data relating to the cost, business case and returns have proved more difficult to collect given commercial considerations. This is an area which needs further work to develop clear and consistent metrics for considering aspects of sustainability in market and investment value. However, these case studies demonstrate the viability of refurbishment schemes which combine economic, social and environmental benefits within a long-term framework.

Policy and regulatory landscape

13. The report includes a review of international policy and regulation and policy within the built environment which shows a general movement towards reducing the whole lifecycle carbon of buildings, with significant innovation and variation across countries and cities.
14. As set out by the Climate Change Committee, the UK does not yet have a clear policy framework for reducing carbon emissions from the built environment in line with its legal targets. To date, policy has focused entirely on operational emissions of running a property rather than a whole lifecycle carbon perspective. There is currently a high degree of uncertainty as to when and how this policy framework will evolve.
15. The report and case studies underline the pioneering work underway in London in both whole lifecycle carbon policy and refurbishment practice. This real-world evidence from the City and others is critical to informing any future London-wide or UK policy in this area.

Market trends

16. The case studies show both the complexity of retrofit/ refurbishment as well as the benefits, often resulting in innovative and successful 'products.' Some remarkable architectural and engineering solutions have been developed and implemented.
17. These include aspects of high-quality data collection (1 Appold St case study); building retention (100 New Bridge St case study); reusing materials at their highest value and use of lightweight materials; material passporting; the integration of low carbon technologies (100 New Bridge St case study); and optimising design for adaptability and flexibility.
18. These solutions have also resulted in co-benefits beyond carbon savings, such as potentially cheaper costs, less use of intensive resources and potentially shorter build programmes. These refurbishment schemes are also driving industry

transformation by creating green jobs and upskilling workers, as recognised by the Skills for the Sustainable Skyline Taskforce.

19. There is increasing collaboration across industry to improve data and transparency. The forthcoming UK Net Zero Carbon Buildings Standard is a cross-industry initiative that aims to reach consensus around key principles that define net zero for different building typologies. Due to launch in 2024, it is expected to encompass operational energy performance, upfront embodied carbon, and whole life carbon limits.
20. From a commercial perspective, there is emerging evidence that buildings can attract a premium on rents due to its green credentials e.g. buildings with lower EPC or high sustainable certification and potentially lower operational costs. However, this is focused on the operation of the building rather than a whole lifecycle carbon perspective.

Recommendations

21. The report draws on the insights from the case studies and policy landscape to recommend several key best practice recommendations for building owners and developers. These include:
 - Collect and analyse existing building data.
 - Ensure the business case also accounts for carbon impact.
 - Evaluate risks and opportunities for the site.
 - Establish a clear strategy for decarbonisation, accounting for comparisons of building types and regulation considerations.
 - Use consistent reporting metrics and review against targets (peer reviewed data is recommended)
 - Consider market maturity – i.e. can lower whole life carbon buildings attract a premium if demand rises?
 - If refurbishment / retrofit is not possible and demolition is required, ensure a justification and plan is in place to have rationalised the demolition and maximise reuse potential of existing materials.
 - Report on as built upfront carbon performance and operational energy in use.
22. These insights and recommendations will feed into the draft 'Planning for Sustainability' SPD which is currently subject to consultation and is the main guidance for applicants on all matters of sustainability.

Proposals

23. The case studies provide a template for building a wider series of best practice refurbishment schemes in the City which capture both carbon performance and wider economic and social value. This would also provide key evidence of the way schemes are aligning with emerging industry metrics and ambitions. This series will engage directly with the construction industry and draw on the increasing quality and transparency of data available. The committee will be updated on progress.

24. The case studies and report will be published to highlight current policy and best practice in the refurbishment of commercial buildings. This will be shared widely through the City Corporation's networks. A follow-up event will also be organised to share and discuss the findings and draw on other important and relevant publications e.g. 'Retrofit first, not Retrofit only' (London Property Association, 2023) and 'Building the Case for Net Zero: Retrofitting Office Buildings' (UKGBC, 2024).
25. The report and its recommendations will contribute to the evidence base for planning policy and guidance, notably the 'Planning for Sustainability' Supplementary Planning Document which was approved by committee for consultation in December 2023.

Corporate & Strategic Implications

26. Buildings are the largest source of greenhouse gas emissions in the Square Mile. The report and case studies are part of a package of initiatives within the City Corporation's Climate Action Strategy which seek to incentivise action to reduce emissions from the built environment in the Square Mile.
27. The report forms part of a wider package of policy work on building refurbishment in the City. These include the Carbon Options Guidance (March 2023), Whole Lifecycle Carbon monitoring data (July 2023), 'Planning for Sustainability' Supplementary Planning Document (December 2023) and the new City Plan 2040.

Financial implications

28. None

Resource implications

29. Any resourcing requirements for follow-on actions will be sought from existing budgets.

Legal implications

30. None

Risk implications

31. None

Climate Implications

32. The Guidance and Case studies form part of the actions of the City Corporation's Climate Action Strategy's Square Mile project plan. Reducing the carbon emissions from buildings is the main challenge for achieving a net-zero Square Mile.

Equalities, Resource and Security implications

33. None

Conclusion

34. The case studies and report underline the transformational shift underway within the built environment industry in London and beyond towards the retention, refurbishment and retrofit of buildings. They draw on a series of leading, real-world schemes which have taken ambitious action in terms of decarbonisation, innovation and value-creation.
35. The documents provide further evidence of what can be achieved through the refurbishment of commercial buildings and provide key insights into the challenges and opportunities involved.

Appendices

Background Papers

- Appendix 1 - Refurbishing the City – insights from current best practice
- Appendix 2 - Commercial Building Refurbishment Case Studies

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