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| Committee(s) | Dated: |
| Operational Property and Projects Sub Committee | December 14 th 2022 |
| Subject: CAS NZ1, NZ3 and RS3 Workstream update for the Operational Portfolio | Public |
| Which outcomes in the City Corporation’s Corporate Plan does this proposal aim to impact directly? | 5,11 & 12 |
| Does this proposal require extra revenue and/or capital spending? | Yes |
| If so, how much? | £10,527,715 mix of revenue and capital |
| What is the source of Funding? | CAS Budget |
| Has this Funding Source been agreed with the Chamberlain’s Department? | Yes |
| Report of: The City Surveyor | For Information |
| Report author: Graeme Low | |

Summary

This report presents an update on the key actions of the operational buildings workstreams as part of the Climate Action Strategy (CAS). Progress has been made in the following key areas:

- Vital Energi have completed building energy surveys to all top fifteen buildings with High Level Assessments issued. Following this, four detailed proposals are now in development.
- Climate Impact Modelling in progress with a “digital twin” model of the square mile completed, workshops completed in September focusing on heat stress and flooding.
- Building Energy Management System analytics software has been rolled out for the Guildhall and LMA.
- £34k Low Carbon Skills funding (BEIS) secured for Heat Decarbonisation plans at 3 sites.

Recommendation(s)

- Note the progress made on actions within the report.
- Note progress made in delivery of project tasks including energy surveys, BEMS Strategy, and design and technology standards.
- Note the progress on the delivery of capital projects including PSDS phase 1.
- Note the implications of the operational property review on timely agreement of carbon saving opportunities.

Main Report

Background

1. The Climate Action Strategy (CAS) measured our direct building emissions in 2018/19 as 36 ktCO₂e, by 2026/7 this must reduce to 15.3 ktCO₂e to reach our net zero target

for our operational properties and Housing portfolio. CO₂e emissions for Housing and operational properties are as follows:

Table 1: Baseline and current carbon emissions by portfolio and 2027 target

| Portfolio | Baseline 2018/19 | YTD (Q2 2022/2023) | 2026/27 Target |
|------------------|---------------------------|---------------------------|---------------------------|
| Housing | 10.6 kt/CO ₂ e | 1.84 kt/CO ₂ e | 4.6 kt/CO ₂ e |
| Operational | 22.2 kt/CO ₂ e | 5.95 kt/CO ₂ e | 10.8 kt/CO ₂ e |

- To support this goal, the CAS buildings approach was presented at the April Corporate Asset Sub Committee in 2021 with a series of discrete actions which conjoin to deliver the CAS strategy NZ1, NZ3 and RS3 for the Operational buildings' portfolio – including housing. These actions are summarised in the table 2 below and demonstrate the requirement for the City Corporation to continue investment in carbon reduction projects.

Table 2: NZ1 - Operational Property and Housing Landlord Areas Actions

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|--|
| 1 – Commission building energy surveys – operational assets and housing |
| 2 - Develop building controls management strategy |
| 3 - Enhance monitoring and targeting programme |
| 4 - Decarbonisation of Heat |
| 5 - Deep fabric retrofit pilot – Commercial asset?? |
| 6 - Additional energy specialist resources |
| 7 - Capital programme roll-out |

Status Updates

Action 1 Progress: Building energy surveys – operational assets & Housing

Corporate

- Vital Energi Ltd. have provided energy efficiency audits to the top fifteen buildings (appendix 1) in support of the Climate Action Strategy. Their activities have involved a high-level assessment of each building, providing a list of projects that can be immediately undertaken, and a list of projects that rely on other existing CoL projects finishing.
- To date, all fifteen buildings have had a High-Level Assessment (HLA) issued. The HLA's have been reviewed and an initial tranche of interventions will be presented in a Gateway 2 paper to Committees in December for approval. These measures have been prioritised according to their return on investment, potential to save carbon and deliverability within a 2-year period. Four investment grade proposals covering seven sites have been completed. These sites are the Guildhall, Barbican Arts Centre, London Metropolitan Archives, Freeman's School, Tower hill Coach and Carpark, Central Criminal Court & Girl's School.

5. These measures and subsequent phases of low carbon interventions are being incorporated into a delivery plan, due for completion in December. The delivery plan will outline additional identified measures needed to meet our scope 1& 2 target and a timeline through to 2026/27.

Housing

6. Etude Consulting Ltd. have been appointed to provide resource support to the tasks related to Housing within NZ1, particularly supporting the management of initial surveys, development of decarbonisation plan, and support surrounding Housing Heat decarbonisation.
7. Survey work has been completed at the Barbican Estate to evaluate the benefit of improving insulation and heating controls with properties. Further cost analysis has recently been completed providing the value and benefit of undertaking these works. We continue to consult with Barbican residents as these proceed.
8. Housing surveys are underway to review landlord areas within our scope 1 & 2 operational emissions, focusing on options for PV, LED lighting upgrades and other opportunities such as pump controls & ventilation efficiency improvements. Awarded to Silver EMS, surveys are expected to be completed by February for landlord areas.

| Next Steps – Action 1 | |
|------------------------------|---|
| a. | Operational: Completion of decarbonisation delivery plan. Presentation of Gateway paper for capital works. |
| b. | Housing: Completion of surveys and feasibility studies for pilot projects. |

Action 2 Progress: Develop building controls management strategy.

9. The Schneider Electric Building Advisor platform (Analytics) has been operating since July 4th. It has already identified opportunities for efficiency improvements and is being integrated with Facilities Management in regular management reporting for the Guildhall and LMA.
10. The building controls draft strategy was completed in November and has been submitted for review
11. Sigma EMS integration with BEMS is progressing as the BEMS is migrated and Sigma is fully onboarded over the forthcoming quarter.

| Next Steps – Action 2 | |
|------------------------------|-----------------------------------|
| a. | Completion of BEMS strategy |
| b. | BEMS integration with Team Sigma. |

Action 3 Progress: Enhance monitoring and targeting programme.

12. Benchmarking, target setting and analysis against variables is currently being set up within Team Sigma for individual sites. In Q4 we plan to have individual targets

updated within Sigma, league tables set up for building categories and benchmarks in place to compare our building performance against National datasets.

Action 4 Progress: Decarbonisation of Heat

13. Citigen - New centre of excellence resource is now in place to support with the Citigen strategy. Meetings have been held with St. Bartholomew’s Hospital, Museum of London for the new development site, and the London Wall West project team to support the development of the network and unlock further carbon saving potential. We are looking to apply to the governments Heat Network Development Unit (HNDU) for £67k of grant funding to support a study on the decarbonisation of the Citigen heat network..

14. Operational estate – We have commissioned engineering consultants (Silver EMS) to provide Heat Decarbonisation Plans for 3 of our sites. This work is being part funded by a £34k Low Carbon Skills Fund grant covering: Heathrow Animal Reception Centre, Walbrook Wharf (update to existing plan,) and City of London Crematorium. We are about to tender a further round of Heat Decarbonisation studies to provide investment grade proposals for sites which have already been assessed at a high-level, for the following sites: City of London School for Boys, Freeman’s School, Alfred Place 8-10, 35-38 New Bridge St, 9 Bonhill St.

Housing – We have commissioned engineering consultants (Beveridge Associates) to undertake feasibility studies to establish the preferred low carbon solutions for the communal heating systems which supply 5 housing estates.

| Next Steps – Action 4 | |
|-----------------------|--|
| a. | Secure HNDU funding for Citigen decarbonisation studies and develop study specification in preparation for commissioning consultancy services. |
| b. | Commission further heat decarbonisation studies for all operational sites, to commence in January and complete by April, focused on those with short-to-medium term priorities, to an investment grade level to allow development of the business case for investment. |
| c. | Complete the housing decarbonisation studies by January and develop the delivery plan. |

Action 5 Progress: Deep fabric retrofit pilot – operational asset

15. This project will be a proof of concept to inform our wider design and resilience standards. Scoping and delivery will be driven by the dedicated design resource within the Centre of Excellence. It will follow the completion of the Design and Technology Standards.

Action 6 Progress: Additional energy specialist resources

16. Following a review of the Centre of Excellence, we have recently appointed a new consultant to support with Housing decarbonisation, new resource is coming in October to support on heat decarbonisation. One role remains vacant within the

Energy and Sustainability Team (Energy Engineering Project Manager) following unsuccessful recruitment campaigns.

17. The Centre of Excellence will also address the NZ3 and RS3 work streams plus the Investment portfolio (NZ4) approach.

| Next Steps – Action 6 | |
|------------------------------|--|
| a. | Appointment of remaining Energy Engineering Project Manager. |
| b. | Actions 1,2,3,4 & 5 are reliant on a fully resourced Centre of Excellence. |

Action 7 Progress: Capital programme roll-out

18. The main capital programme roll-out will flow from opportunities identified in the energy surveys and gateway paper presented in December (action 1). The £9.5m PSDS project, Phase 1 & 2 of the Energy Reduction Programme (completion 2022/23) and £4.5m Guildhall Cooling replacement project (completion expected summer 2023) will contribute to our carbon reductions. Project resource has also been procured to ensure Climate Action Strategy capital works can continue following the submission of the Gateway paper in December
19. Specific projects at three sites categorised as ‘quick-wins’ have been progressed to the Investment Grade Proposal stage. These are LED lighting projects for which there is immediate known benefit and value for money. Projects are focusing on City of London Freeman’s School, City of London School for Girls, and Central Criminal Court. The school projects are currently on hold, pending funding confirmation and a trial at Central Criminal Court is due in Q4.

| Next Steps – Action 7 | |
|------------------------------|---|
| a. | Extend interim project management resource for 2023/24 and onwards. |
| b. | Delivery of quick win projects at three sites. |

NZ3 Capital Projects Design Standards and RS3 Resilient Buildings

20. Arcadis have been appointed to develop the technology and design standards which will be delivered in Q3, respectively. Work continues on both the Design and Technology standards with an initial draft expected in December. We are now working through the design and functionality of the standards. Embedding these standards will begin in Q4 2022/23, planned completion is in March 2023.
21. Pilot whole life carbon assessments have been completed by BDP on a range of diverse projects. The process and evaluation of project performance will be utilised in the application of the design standards. Further details are featured within the appendix.

22. The climate impact modelling began with a digital twin model of our buildings in June, focusing on flood and heat stress. Two workshops have been completed to inform further on the interventions required for key assets. This modelling will inform the resilience action plan which is planned for completion by Q3.

Project support activities

23. Arcadis have been appointed by the City Surveyor to provide, initial assurance support; ongoing assurance; establishing and promoting the Centre of Excellence and to lead the development of an auditable energy management system. The assurance support will finish as planned in November 2022.

Key risks

24. Key risks are included within item 4. of the appendix. This now includes the current operational property review impacting the level of opportunity to reduce carbon across this group of buildings.

Corporate & Strategic Implications

Strategic implications:

25. This suite of actions drives the objectives of the Climate Action Strategy, buildings stream and will provide linkage and co-ordination with ongoing property management, capital schemes and cyclical works.

Financial implications:

26. The CAS tasks in this report are covered within the overall Climate Action Strategy programme. Capital and resource costs are estimated at £21m for the 6-year term for the tasks related to these project plans. This funding forms part of the £68m agreed at RASC and P&R committees in September 2020.

Climate implications:

27. This action stream will deliver the Net zero carbon goals of the Corporation and support the climate residence goals of the broader programme.

Conclusion

28. The City Surveyor has commenced the mobilisation and has moved into the delivery stage of the building-related workstreams, three being relevant to this Sub Committee (NZ1, NZ3 & RS3). A flexible approach continues to be necessary to secure the right mix of skills and experience needed. This approach will support our need to move the programme forward and meeting key milestones.

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