

Committee(s)	Dated:
Operational Property and Projects Sub Committee	July 20th 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 started a programme of building energy surveys, all top fifteen buildings have High Level Assessments issued. Following this, five detailed proposals are now in development.
- Appointment of Arcadis to provide assurance and support to City Surveyors led CAS Projects (NZ1, RS3 & NZ3).
- One Energy Project Manager post has been filled with one remaining vacancy currently in recruitment.
- Climate Impact Modelling has begun with a "digital twin" model of the square mile in development, workshops are planned for July focusing on heat stress and flooding.

Recommendation(s)

- Note the progress made on actions within the report.
- Note the completion of the review of the Centre of Excellence and the subsequent inclusion of support for heat decarbonisation and merger of resilience and design standards support services.

Main Report

Background

1. The Climate Action Strategy (CAS) measured our direct building emissions in 2018/19 as 36 ktCO_{2e}, by 2026/7 this must reduce to 15.3 ktCO_{2e} 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	12 months to Mar 2022	2026/27 Target
Housing	10.6 kt/CO ₂ e	6.9 kt/CO ₂ e	4.6 kt/CO ₂ e
Operational Properties	22.2 kt/CO ₂ e	15.7 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 to continue investment in carbon reduction projects.

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

1 - Commission building energy surveys– operational assets & 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: Commission building energy surveys – operational assets & Housing

Corporate

- Vital Energi Ltd. are providing 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, to provide 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 been through an initial survey and a High-Level Assessment issued. This is currently being reviewed and appraised and a programme of further detailed proposals and subsequent works will be developed and reported on in Q2. Five investment grade proposals have been completed at the Guildhall, Freeman's School, Tower hill Coach and Carpark, Central Criminal Court & Girl's School.

Housing

5. The Housing Action Plan has been drafted and presented to Committees for approval in September, returning to the Community and Children's Services Committee for approval in the first half of 2022/23.
6. Survey work has been completed at the Barbican Estate to evaluate the benefit of improving insulation to soffits, barrel vaulted roofs and internal insulation in general to properties, improvements to heating controls. Further cost analysis is currently taking place to ascertain the value and benefit of undertaking these works. We continue to consult with the Barbican Association as this progresses.
7. Housing surveys are currently being commissioned to review scope 1 & 2 operational emissions, focusing on options for PV, LED lighting upgrades and other opportunities such as pump controls, ventilation, and lift efficiency improvements. This will later combine with survey work focusing on heat decarbonisation opportunities.

Next Steps – Action 1	
a.	Operational: Completion of energy surveys and development of project delivery plan for operational properties.
b.	Housing: Commission building surveys and feasibility studies for pilot projects.

Action 2 Progress: Develop building controls management strategy.

8. The Schneider Electric Building Advisor platform (Analytics) has now gone live, training for users will commence from the week commencing 4th July 2022. The platform enables our Building Energy Management System resources to start the creation of tasks to action energy inefficiency issues with HVAC plant at Guildhall Complex and London Metropolitan Archives from 4th July onwards.
9. The Building Energy Management System (BEMS) Phase 1 Upgrades LMA and Walbrook Wharf- consultant has been appointed and project planning in progress. The Guildhall Yard East upgrade project has appointed a consultant and is working on detailed design and options appraisals for gateway 3-4 paper.
10. Sigma EMS integration with BEMS is progressing as the BEMS is migrated and Sigma is fully onboarded over the forthcoming quarter. The draft Building Controls Strategy is expected for 30/07/2022. This is dependent on completion of technical standard for BEMS migration projects which is currently with the City Surveyors projects team for comment.

Next Steps – Action 2	
a:	Integration of BEMS with Sigma
b.	Begin BEMS upgrades at LMA and Walbrook Wharf

Action 3 Progress: Enhance monitoring and targeting programme.

11. The TEAM Sigma software has been rolled out, following the successful completion of initial user training. Benchmarking, target setting and analysis against variables is now being set up.

Action 4 Progress: Decarbonisation of Heat

12. Citigen - 4MW of heat pumps are now installed and E.On are moving into a long-term period of seasonal commissioning – E.On estimate 25% carbon reduction following the commissioning process. Representing 4,000 tCO₂ per annum across the network.
13. Operational estate – Capital works assessment being undertaken by PSDS partners to remove/ reduce fossil fuel derived heat provision. Centre of Excellence support is now in place to lead on this and develop/review the strategy for Citigen post 2027.
14. Further discreet feasibility studies will shortly be developed to provide further details on the opportunities to decarbonise heat across the operational properties.
15. Housing – Additional consultancy work is currently being procured as part of the programme to review opportunities focused on reducing fossil fuel-based heat provision.

Next Steps – Action 4	
a.	Identify additional funding streams for decarbonisation support.
b.	Continue with Citigen decarbonisation studies prior to review period in 2024.
c.	Undertake review of housing opportunity.

Action 5 Progress: Deep fabric retrofit pilot – operational asset

16. 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.

Action 6 Progress: Additional energy specialist resources.

17. A review of the Centre of Excellence (CoE) structure and roles has been completed. Changes were agreed including the merging of resource for resilience and design standards and the creation of resource to support heat decarbonisation. We have recruited one of two Energy Project Managers to support the delivery of NZ1, the second role is being advertised with a closing date of 27/07/22. The Centre of Excellence is now embedded with support from detailed in the table below. Housing is likely to be resourced via alternative providers in the coming weeks.

Centre of Excellence roles	
Sustainable Investment Property Specialist – Arcadis (in place)	Heat Decarbonisation Engineering Support – Arcadis (in place)
Resilience and Sustainable Design – Arcadis (in place)	Energy Project Services (Housing) - TBC
Building Management Systems Operations – Schneider (in place)	Monitoring and Targeting – Team Energy Auditing (in place)

18. This resource will also address the NZ3 and RS3 work streams plus the Investment portfolio (NZ4) approach.

Next Steps – Action 6	
a.	Appointment of remaining Energy Project Manager and remaining resource requirement for BMS and Housing 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

19. The main capital programme roll-out will flow from opportunities identified in action one energy surveys. It should be noted that existing carbon saving projects are also currently in progress with the £9.5m PSDS project (completing in August 2022), Phase 1 & 2 of the Energy Reduction Programme (completion 2022/23) and £4.5m Guildhall Cooling replacement project (completion expected summer 2023). Project resource is currently being procured to ensure Climate Action Strategy capital works can continue from July onwards.
20. 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. This aims to begin the delivery phase of the operational Climate Action Plan without delay.

Next Steps – Action 7	
a.	Project resource in place via framework in July to enable to effective Project Management of upcoming projects.
b.	Delivery of quick win projects at three sites.

NZ3 Capital Projects Design Standards and RS3 Resilient Buildings

21. Arcadis have been appointed to develop the technology and design standards which will be delivered in Q2 and Q3, respectively. Work has begun on both the Design and Technology standards beginning with scoping workshops in June. Embedding these standards will begin in October 2022, planned completion is in March 2023.

22. The climate impact modelling has begun with a digital twin model of our buildings being developed in June, highlighting the impact of resilience risks such as increased temperatures, fluvial and pluvial flooding. A series of workshops are planned for early July 2022 to review the initial findings. 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 project support across each individual project (NZ1, RS3 & NZ3). As part of this brief support will be in place to cover 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 is now extended through to November 2022.

Key Risks

Risk	Mitigation
Delays in securing resource Impacts project delivery.	Review of Centre of Excellence completed to address this issue. Use of flexible frameworks for Project Management resource.
Funding gap emerges following investment grade proposals.	Existing funding allocation to be complemented with grant funding applications. Investigate energy performance contracts option to minimise capital investment.
Carbon grid factors adversely affected.	Keep in review BEIS grid factors and their impact on reach the 2026/27 Targets.
Major projects/programmes: The proposed further review of operational properties as part of the MTFP and Net Zero Budgeting.	Major programmes and projects may impact the decisions on CAS interventions or reduce the payback period if a decision is made to dispose or refurbish a building. In all cases full consideration should be made within the decision making process.

Corporate & Strategic Implications

Strategic implications:

24. 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:

25. 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:

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

Conclusion

27. 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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