



City of London Corporation

Climate Action Strategy

NZ3 – Capital Projects (Design Standards)

Project Plan

Version 1.1

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Project Introduction

In support of the Climate Action Strategy (CAS), commencing implementation from April 2021, this Project Plan details how action will be accelerated to ensure all future capital projects (refurbishments and new build) meet the highest commercially viable standards for sustainable and low carbon design, incorporating whole life cycle cost and carbon analysis and modern methods of construction, whilst accommodating for the unique and historic characteristics of the City of London assets and heritage and future resilience needs.

This will support achievement of the following net zero vision and goals:

NET ZERO VISION:

- The City Corporation is responsible for some of Central London's most historic, landmark buildings. The net zero future will prepare them for the next one hundred years, reducing emissions and costs, while improving occupant comfort and productivity.
- A future where all construction materials have a second life and innovation and best practices drive the adoption of low-impact materials and design efficiencies. Where all organisations are competing to rent the lowest carbon and circular buildings and where empty existing buildings are immediately re-purposed.

NET ZERO GOALS:

- City of London Corporation scope 1 and 2 emissions are net zero by 2027 and scope 3 emissions are net zero by 2040.
- Climate resilience in our buildings.

Introduction

Modelling completed by Arup in August 2020 identified the 2018 baseline Scope 1 and 2 emissions (GHG Protocol operational control) as 36.4 ktCO₂e. In order to achieve net zero by 2027, emissions need to reduce to at least 16.0 ktCO₂e (a 55% reduction), at which point residual emissions will be sequestered by planned natural capital projects.

Existing planned projects, building stock changes and decarbonisation of the UK grid presented in the Arup model predicted that Scope 1 and 2 emissions will reach 14.7 ktCO₂e by the end of financial year 2026/27.

A fundamental assumption of this is that planned lifecycle works and modelled stock changes support this trajectory. Therefore, the implementation of robust design standards across both the Corporate and Investment Property Groups will be an essential mechanism to ensure that any works support the achievement of CAS targets, mitigate any risks of underperformance and embed net zero behaviours when delivering new buildings, planned refurbishments and/or replacing plant and systems at end of life. This is particularly important for both the markets consolidation programme, which is planned in 2026 and assumes a new build energy reduction of 50% from existing levels, and the Fleet Street estate programme which is planned in 2025 and is expected to perform as per [LETI Guidance for Commercial offices](#).

Design standards that take into account net zero aspirations will also ensure that any works completed in the short term will actively support the achievement of net zero by 2040, mitigating the need to go back to assets at a later date to complete additional retrofit activities. This is timely as both the new Part L of the Building Regulations (expected at the end of 2021) and the new London Plan will require review and update of design standards in the short term. In addition, new net zero standards will support the integration of whole life cycle carbon and cost analysis, low-impact materials and circular economy principles in to the day-to-day activities of The Corporation.

Furthermore, the implementation of this Action Area has strong links with the CAS resilience workstreams helping to anticipate, prepare for and respond to hazardous events, trends and disturbances related to climate change. Robust design standards will provide the opportunity to embed resilience measures into upgrade plans, again mitigating the need to go back to assets at a later date to complete additional retrofit activities.

It is important to note that the standards alone are no guarantee of quality and their implementation. Therefore, they must be underpinned by robust long-term management helping to safeguard that the best design intentions are delivered on the ground.

Against this background, this Project Plan identifies Tasks that have been developed to address the following three aims:

- **Deliverable** – tasks can be completed within the identified timescales;
- **Affordable** – projects can be accommodated within The Corporation’s current and future budget constraints; and
- **Impactful** – actions make expected carbon reductions towards both the 2027 and 2040 targets.

To achieve these aims the following high-level actions will be implemented, and these are split into individual Tasks in Table 1.

Year 1-2

- Onboarding of resources to deliver Tasks;
- Whole life cycle emissions footprint and cost analysis;
- Development of Net Zero Technology Standards;
- Development of Net Zero Design Standards;
- Development of soft landings/ post occupancy approach;
- Coordinate with Buildings Resilience Action Area.

Year 2+

- Circular construction / low-embodied emissions pathfinder project;
- Ongoing update of design standards;
- Ongoing embedding, management and training.

How to use this document

This document outlines the costs, benefits and overall approach to reducing emissions through new net zero and resilience design standards to support delivery of the Climate Action Strategy. It is to be used as a baseline against which to monitor progress. It will be kept as a live document and will be updated periodically subject to the Change Control Procedure.

Project Objectives

The Project Objectives for this Project Plan are:

- Develop new net zero technology and design standards;
- Embed use of whole life cycle carbon and cost analysis;
- Embed consideration of low-impact materials and circular economy principles;
- Evaluate commercial viability on a live project.

The table below details the key Tasks that will be completed to achieve the Project Aims. Further detail on each Task can be found in Appendix 1. The focus of the 2021/22 plan will be to mobilise and develop new standards in the short term that, when successfully embedded into ways of working, will support achievement of longer term targets. This will be measured as per the KPIs as identified in Table 6.

It is vital that these Tasks interface with outcomes from the resilience and supplementary planning guidance Action Areas. This will make sure synergies to improve energy efficiency and reduce carbon are consistent with the outcomes from these CAS activities. The role of the Sustainability Lead (detailed below) will be to co-ordinate across Action Areas to facilitate this.

Table 1 - Tasks and project objectives

| Theme | Ref. | Task | Rationale | Outcome | Key Actions in 21/22 | Team Lead | Lead support |
|--------------------------------------|------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------|
| Whole life analysis | 1 | Whole life cycle emissions footprint and cost analysis | <ul style="list-style-type: none"> • Address the (incorrect) perception that current standards are sufficient to achieve net zero. • Identify gaps where action should be targeted. • Enabling task for input into future workstream. | Assessment of how current Coporation standards support net zero. Assessment of cost and carbon impact of potential interventions on capital projects. Toolkit for training purposes. | <ul style="list-style-type: none"> • Procurement of consultancy support. • Review and assessment of existing standards. • Gap analysis for achieving net zero to inform proposed guidelines. • Life cycle emissions and cost analysis. • Produce toolkit for training. | Property Project Director | Sustainable Design Expertise |
| Net Zero Technology Standards | 2a | Development of Net Zero Technology Standards | <ul style="list-style-type: none"> • Planned refurbishments and/or replacing plant and systems at end of life need to positively contribute to net zero carbon without the need for retrofit at a later date. • Whole life cycle carbon emissions and cost need to be incorporated into corporate policies and procedures. | Suite of technical specifications for main technologies during refurbishment. Integration of standards into minor works specifications and processes. | <ul style="list-style-type: none"> • Procurement of consultancy support. • Generate suite of technical specifications for main technology areas e.g. lighting, heating systems, air conditioning and refrigerant gas (moving away from like-for-like replacements). • Address any gaps as identified by Task 1. | Property Project Director | Sustainable Design Expertise |

| Theme | Ref. | Task | Rationale | Outcome | Key Actions in 21/22 | Team Lead | Lead support |
|-------------------------------------------------|------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------|
| Net Zero Design Standards | 2b | Development of Net Zero Design Standards for new developments and major refurbishments. | <ul style="list-style-type: none"> • New builds need to be net zero ready. • Planned stock changes need to perform as per Arup model to contribute to net zero targets. • Whole life cycle carbon emissions and cost need to be incorporated into corporate policies and procedures. | Suite of design standards for new developments including low-impact materials and design efficiencies | <ul style="list-style-type: none"> • Procurement of consultancy support. • Assess the cost and carbon impact of potential interventions in new developments. • Assess and quantify low-impact materials specifications. • Generate a suite of standards to which new developments can be designed, constructed and operated to. This includes whole life cycle emissions, sustainable and circular economy principles and low-impact material specifications. • Provision of a toolkit for training purposes. | Property Project Director | Sustainable Design Expertise |
| Performance of new design standards | 2c | Assess performance of new design standards | <ul style="list-style-type: none"> • Assure any new capital works design standards, material specifications and operational implications work in the current commercial marketplace. • Assurance that standards are up to date and fit for purpose. | Assurance that design standards are performing as expected. | <ul style="list-style-type: none"> • Assess performance of new design standards to ensure they are performing as expected on live projects. • Checking of compliance with standards and enforcing them where needed. | Property Project Director | Sustainable Design Expertise |
| Soft landings/ post occupancy evaluation | 3 | Develop approach to soft landings and post occupancy review | <ul style="list-style-type: none"> • Designs need to operate as intended. | Approach to soft landings and post occupancy review developed. | <ul style="list-style-type: none"> • <i>Planned for 22/23 as requires input from other Tasks – see Project Schedule. If the opportunity to incorporate this in to a live project arises beforehand, the options to bring this Task forward will be explored.</i> | Operations Group Director | Sustainable Design Expertise |

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| Theme | Ref. | Task | Rationale | Outcome | Key Actions in 21/22 | Team Lead | Lead support |
|---------------------------|------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------|
| Pathfinder project | 4 | Circular construction / low-embodied emissions pathfinder project | <ul style="list-style-type: none"> • Testing the outputs of the previous Tasks. • Gathering lessons learnt. • Feedback loop to inform future design standards. • Tackling the refurbishment of a “hard to treat” building. | Refurbishment of a historic building utilising best practise, low carbon interventions. | <ul style="list-style-type: none"> • <i>Planned for commencement in year 22/23 as dependent on other workstreams – see Project Schedule</i> | Property Project Director | Sustainable Design Expertise |
| Staff resource | 5 | Appoint specialist resource | <ul style="list-style-type: none"> • Activities identified above will need to be managed. • Design standards will need ongoing management, updating and embedding. • Design standards will need to link with resilience workstreams. | Resourcing of Sustainable Design Specialist. | <ul style="list-style-type: none"> • Resourcing of Sustainable Design Specialist. | Property Project Director | Sustainable Design Expertise |

Team structure

The Teams involved in the delivery of this Project Plan are shown in Figure 1. How this integrates within the wider Buildings Centre of Excellence is explained in more detail in the Delivery Approach Section.

How additional resources are managed within the City Surveyors Department is shown in

Figure 2.

The colour coding is as follows:

- Yellow boxes indicate areas of current activity that support the CAS;
- Green boxes show those additional activities required by this Plan that will be unlocked through additional resources;
- The grey boxes indicate additional staff resources either through outsourced team members (e.g. secondments) or third party flexible resource to be employed according to delivery need. As indicated by the legend this is not necessarily permanent employees.

This structure identifies the role of a Sustainable Design Specialist. Working across departments, the role will initially be to lead and manage development of new design standards. This will then switch to focus on and championing sustainable design in new builds and embedding standards within the processes of the Operational Group. To successfully achieve these outcomes, it is important that there is organisational reach back to a wider pool of specialisms e.g. architecture, BREEAM, circular economy, embodied carbon, soft landings, MEP, structural, sustainable materials, etc. to encompass the breadth of expertise required for this action area. Therefore, the procurement approach for this role should reflect that this role may not be a specific individual but could be an organisation (or combination of the two).

The Team Structure has been developed to focus on the Year 1 and 2 priorities of completing whole life cycle emissions footprint and cost analysis, developing new design standards and development of an approach to soft landings/ post occupancy evaluation. This will likely change as the programme progresses depending on service outcomes. For example, the role of the Sustainable Design Specialist will change from the development of new standards to their management and embedding over time. To make sure that the Team Structure remains fit for purpose, the Senior Responsible Officers and Buildings Chief Officer Group will review and manage resource requirements instilling a flexible approach that allows the market to innovate and deliver The Corporation's requirements efficiently.

Figure 1 – Delivery Teams - NZ3 – Capital Projects (Design Standards)

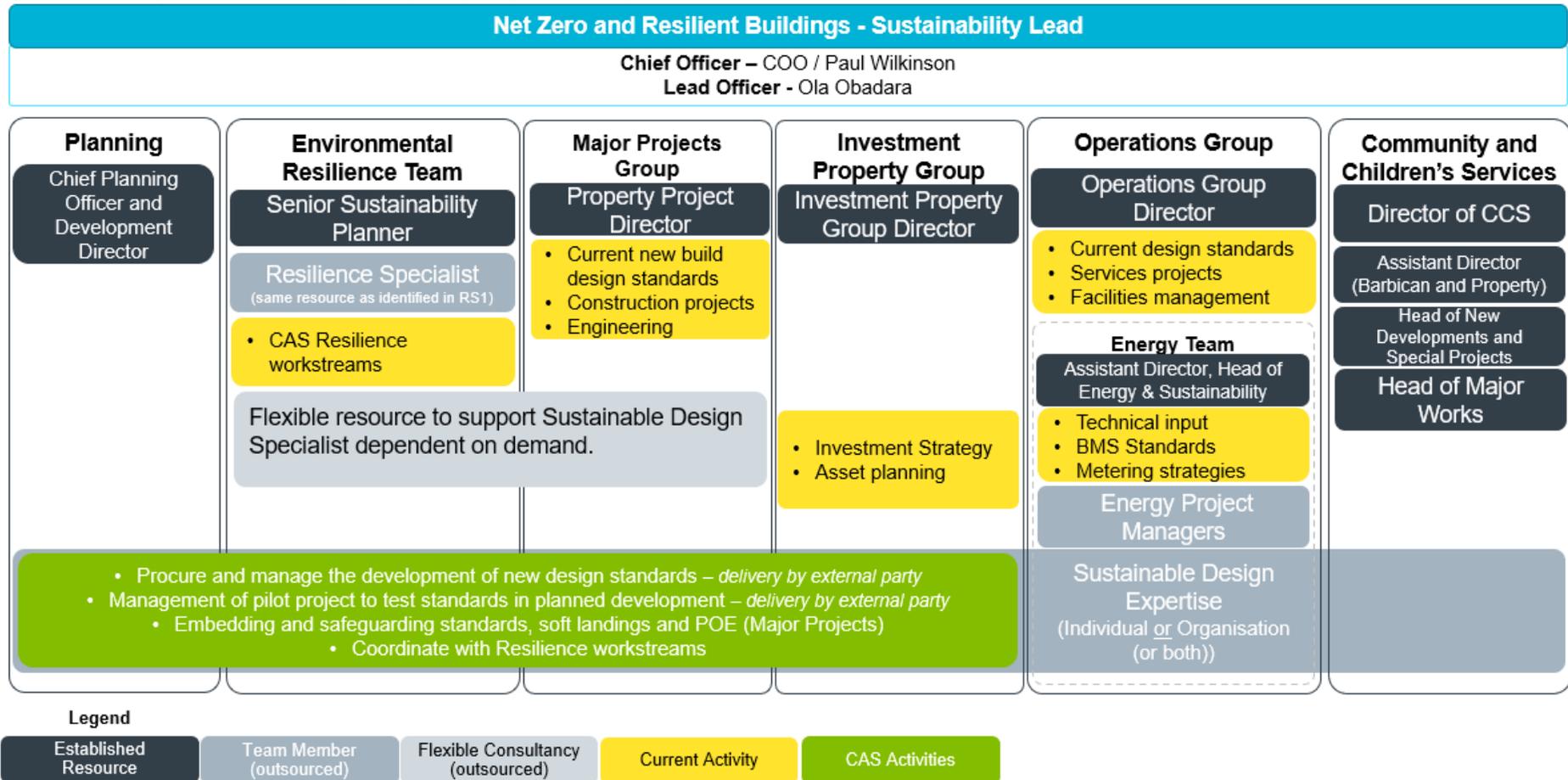
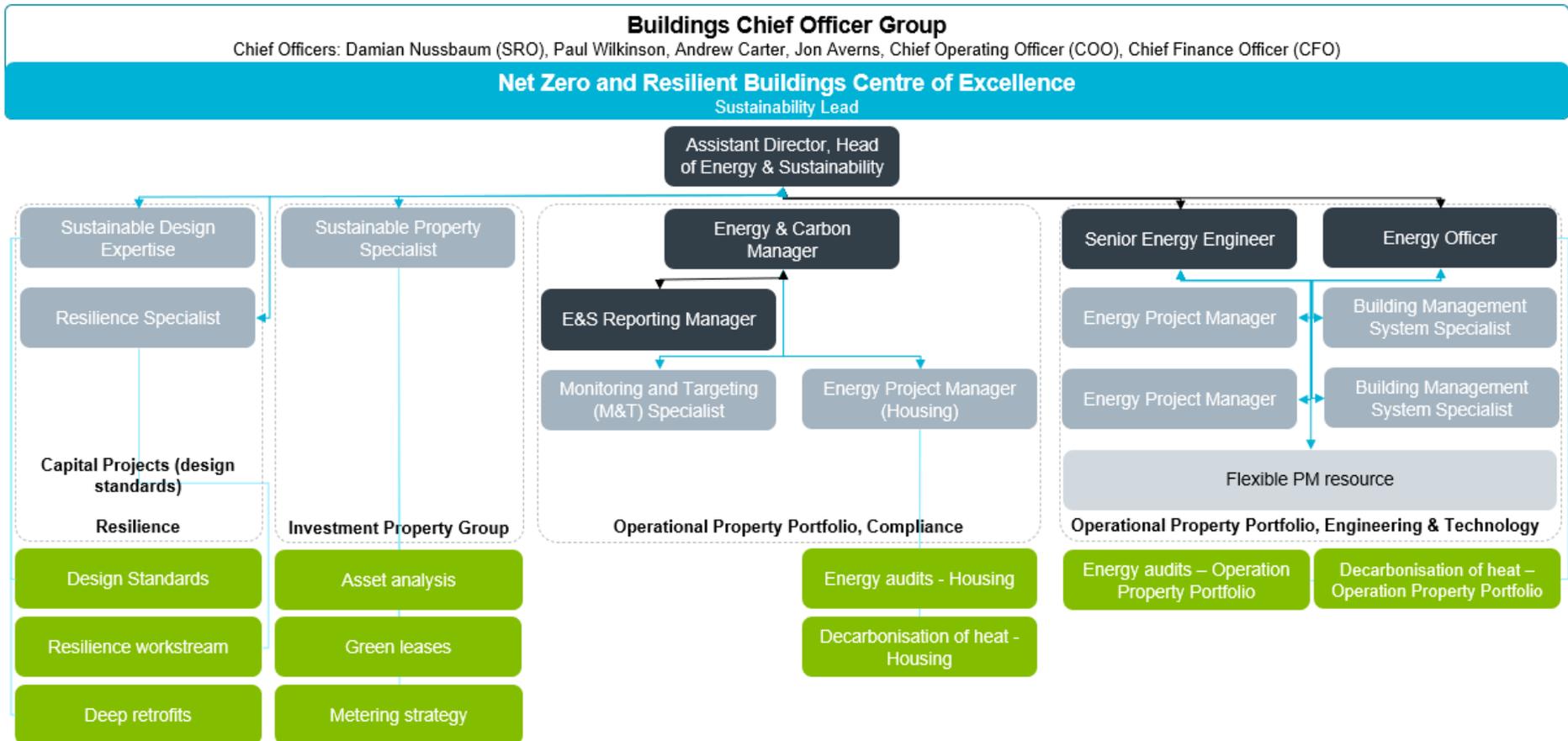


Figure 2 - Team structure - Capital Projects (Design Standards)



Project Schedule & Gantt Chart

The attached Project Schedule has been developed to accelerate and optimised delivery from the 1st April 2021.

Delivery Plan (Gantt chart)

| Task Number | Task Detail | Responsible | Completion (%) | FY 21/22 | | | | FY 22/23 | | | | FY 23/24 | | | | FY 24/25 | | | |
|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | Apr - Jun | Jul - Sep | Oct - Dec | Jan - Mar | Apr - Jun | Jul - Sep | Oct - Dec | Jan - Mar | Apr - Jun | Jul - Sep | Oct - Dec | Jan - Mar | Apr - Jun | Jul - Sep | Oct - Dec | Jan - Mar |
| Net Zero and Resilient Buildings Centre of Excellence | | | | | | | | | | | | | | | | | | | |
| CoE-1 | Establishment of Net Zero and Resilient Buildings Centre of Excellence | Director of Innovation & Growth, City Surveyor | 0% | █ | | | | | | | | | | | | | | | |
| CoE-2 | Establish energy targets and intensity metrics where data gaps | Director of Innovation & Growth, City Surveyor | 0% | █ | | | | | | | | | | | | | | | |
| NZ3 – Capital Projects (Design Standards) | | | | | | | | | | | | | | | | | | | |
| DS-1 | Review of existing Design Standards to assess how they address net zero objectives and identify any gaps | Property Project Director | 0% | | █ | █ | █ | | | | | | | | | | | | |
| DS-2a | Development of Net Zero Technology Standards | Property Project Director | 0% | | | █ | █ | █ | █ | █ | | | | | | | | | |
| DS-2b | Development of Net Zero Design Standards for new developments and major refurbishments. | Property Project Director | 0% | | | █ | █ | █ | █ | █ | | | | | | | | | |
| DS-2c | Assess performance of new design standards | Property Project Director | 0% | | | | | | █ | █ | █ | █ | | | | | | | |
| DS-3 | Develop approach to soft landings and post occupancy review | Operations Group Director | 0% | | | █ | █ | █ | | | | | | | | | | | |
| DS-4 | Circular construction / low-embodied emissions pathfinder project | Property Project Director | 0% | | | | | █ | █ | █ | █ | █ | █ | █ | █ | █ | █ | | |
| DS-5 | Appoint specialist resource | Property Project Director | 0% | █ | █ | | | | | | | | | | | | | | |

Project Business Case

Project costs

Total project costs of £1.4 million have been identified in the Project Initiation Document by the Climate Action Strategy Team. The costs for individual tasks have been ascertained by the Energy Team. This budget is not index linked to allow for inflation. These costs include resource time which is to be capitalised and therefore come out of this budget. In addition, inflation has not been applied. It is assumed that funding will be available to support workstreams to be mobilised in line with the Project Schedule.

As Table 2 demonstrates, project costs are made up of capitalised resource time with an initial period of focused project consultancy in Year 1 to establish the new standards. This will be supported by additional resource, to manage, embed and safeguard the standards, ensuring design intentions are delivered on the ground (see Team Structure above).

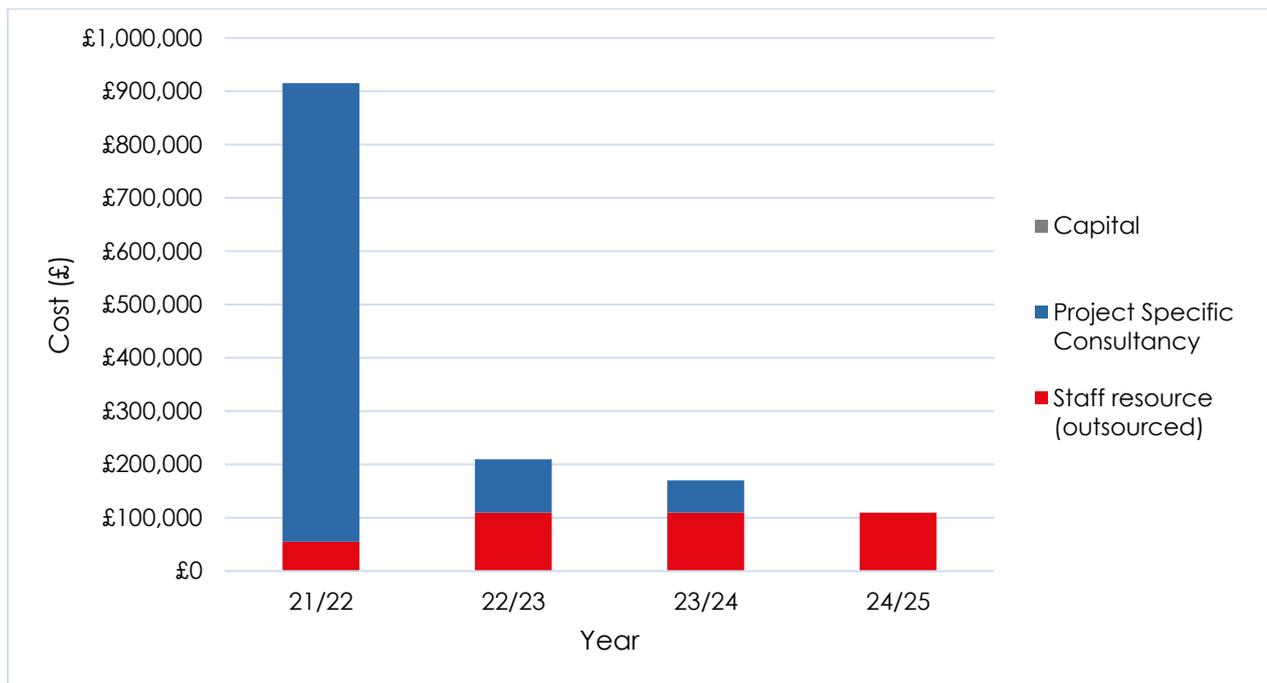
Budget has been identified in 2023/24 to allow for the update of the design standards in response to new industry guidance where required and to incorporate feedback for assessing the standards in operation, including the pathfinder project.

Existing Project Initiation Document assumes £400,000 for sustainable design standards (new build and refurb), and £300,000 for low-impact material specifications. This has been spread evenly across both Tasks 2a and 2b.

Table 2 – Costs by Task

| Tasks | Category | Costs per year (£k/annum) | | | |
|---------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------|----------------------------------|-------------|-------------|
| | | 21/22 | 22/23 | 23/24 | 24/25 |
| 1 - Whole life cycle emissions footprint and cost analysis | <i>Project specific consultancy</i> | £160 | - | - | - |
| 2a - Development of Net Zero Technology Standards | <i>Project specific consultancy</i> | £350 | - | £30 | - |
| 2b - Development of Net Zero Design Standards for new developments and major refurbishments | <i>Project specific consultancy</i> | £350 | - | £30 | - |
| 2c - Assess performance of new design standards | <i>Staff resource (outsourced)</i> | <i>Outsourced resource as identified in Task 5</i> | | | |
| 3 - Develop approach to soft landings and post occupancy review | <i>Project specific consultancy</i> | - | £100 | - | - |
| 4 - Circular construction / low-embodied emissions pathfinder project | <i>Capital</i> | - | <i>Capital funding dependent</i> | | |
| 5 - Sustainable Design Specialist | <i>Staff resource (outsourced)</i> | £55 | £110 | £110 | £110 |
| Total | Project specific consultancy | £860 | £100 | £60 | - |
| | Staff resource (outsourced) | £55 | £110 | £110 | £110 |
| | Capital | - | - | - | - |
| | Total | £915 | £210 | £170 | £110 |

Figure 3 - Costs breakdown by Category¹



¹ Project Specific Consultancy refers to a discrete pieces of outsourced consultancy work with a predetermined scope and defined start and end dates linked to appropriate Tasks as identified in Appendix 1.

Project Benefits

There are a number of quantitative benefits that will be achieved from this Project Plan. These will be measured and reported as per the KPIs in Table 6.

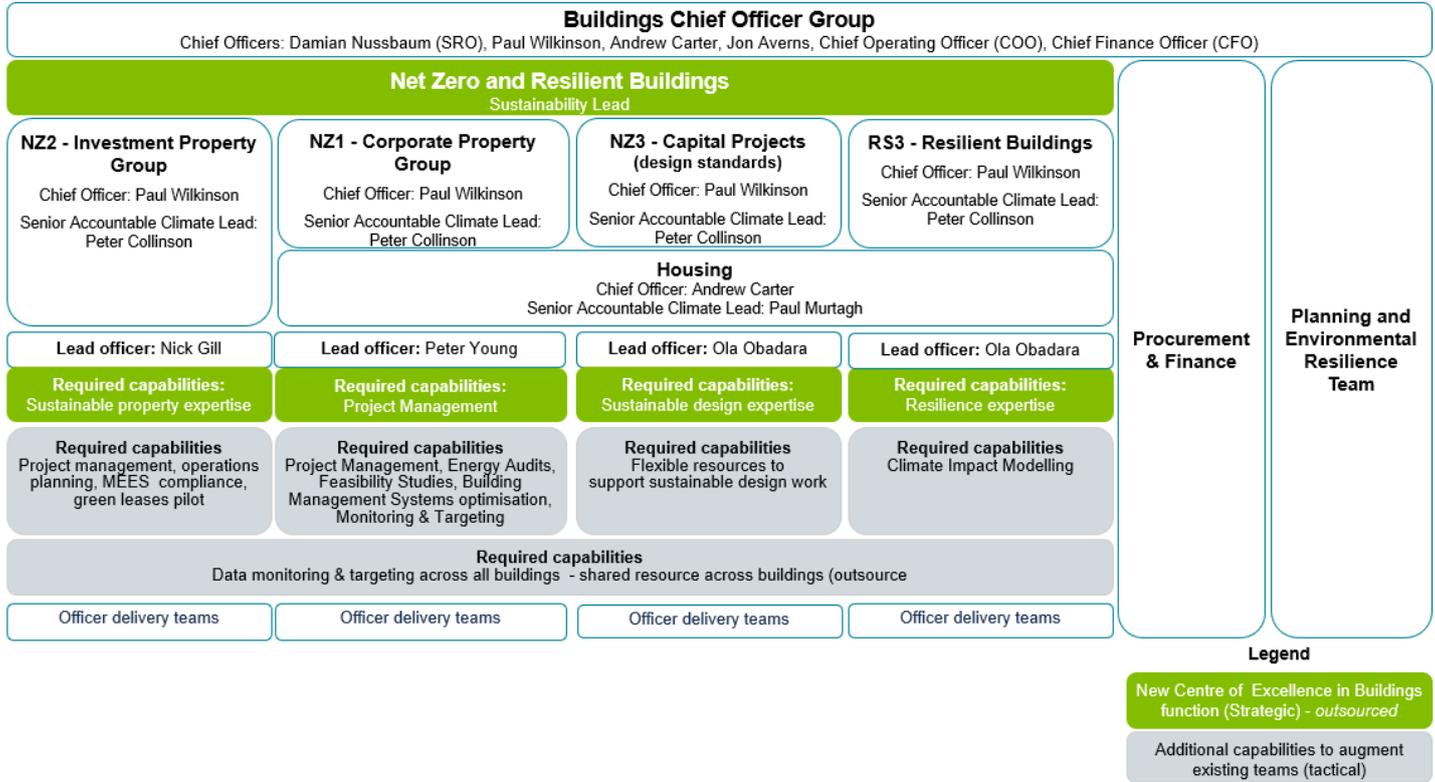
- Reduced operational energy consumption and associated carbon emissions and costs;
- Reduced levels of embodied carbon in materials;
- Increased uptake of low impact materials;
- Design out of waste;
- Recycling and reuse of products and materials;
- Improved occupant comfort;
- Improved resilience to climate events;
- Reducing cost of compliance with London Plan, emerging Part L and BREEAM (or other environmental assessment schemes) requirements;
- Greater co-ordination and collaboration between operational and capital projects teams of The Corporation, reducing the maintenance and management burden on FM teams.

Potential additional, non-quantifiable savings will also include:

- Improved commissioning and operational performance;
- Understanding and positioning for innovative and emerging technologies;
- Improved occupant comfort and internal environment;
- Future proofing of projects, avoiding the need to complete additional works at a later date;
- Support delivery of the RS1 – Resilient buildings to achieve a climate ready City Corporation avoiding disruption to services from climate risks and preparing the Square Mile to adapt to future climate projections.
- Support The Corporation's aspiration to sign up to the C40 Clean Construction declaration. This declaration acts as a commitment to reduce embodied carbon emissions by at least 50% for all new buildings and major retrofits by 2030.

Delivery Approach

Figure 4 - Net Zero and Resilience Buildings Centre of Excellence, Delivery Model



To drive and direct leadership, best practice, research, support and training to all areas of building decarbonisation and resilience work to deliver the CAS, a Net Zero and Resilient Buildings Centre of Excellence will be established. This will sit outside of the regular reporting structure to drive strategic level targets into mobilisation and delivery across departments. Through this approach it will provide a view across all Tasks and Project Plans to control and package up service requirements based on the outputs of feasibility studies etc. maximising value from the market based on clear desired outcomes and a programme level view.

Its role will include concentrating knowledge from across all activity areas to attain and sustain high performance and value, capture lessons learnt and provide a feedback loop for continuous improvement.

The benefits of this approach will be:

- Member-buy in and confidence;
- Limiting “single points of failure”;
- Development of a cross-discipline team;
- Share resources and learning across workstreams;
- Ability to flex staff resource to meet need;
- Ability to draw in a wide range of expertise and experience from the private sector.

Net Zero and Resilient Buildings Sustainability Lead

To manage and lead the Net Zero and Resilience Buildings Centre of Excellence, a Sustainability Lead will be resourced. This will allow The Corporation to utilise the third party expertise of someone with extensive experience of delivering large, complex programmes across net zero, resilience and energy in buildings to drive delivery across the four buildings workstreams.

Their role will comprise:

- Managing and leading the Net Zero and Resilience Buildings Centre of Excellence;
- Reporting progress to CAS Senior Responsible Officers;
- Coordinating and identifying synergies between workstreams;
- Aligning strategy and policy with delivery;
- Managing the transition from project definition to mobilisation and implementation;
- Facilitating reach back to private sector expertise and best practice.

Delivery model

The delivery model for the Net Zero and Resilient Buildings Centre of Excellence is illustrated in **Error! Reference source not found.** This shows how all four workstreams across the buildings Action Areas will come together, identifies the key officers and illustrates the role of additional resource capabilities to support existing teams.

For this Project Plan the key resources are:

- Net Zero and Resilient Buildings Centre of Excellence Sustainability Lead
- Chief Officer – Paul Wilkinson
- Senior Accountable Climate Lead – Peter Collison
- Lead Officer – Ola Obadara

The team structure for the Capital Projects (Design Standards) Action Area is detailed above.

Approach to staff resourcing

The diagram above shows how the proposed Net Zero and Resilient Buildings Centre of Excellence Sustainability Lead would relate to the four workstreams, including this one.

Whilst this plan identifies staff resource requirements, it is not expected that this will be delivered through new internal hires. This will be delivered through project specific consultancy, outsourced staff and/or flexible project management resources allowing The Corporation to drive value from the supply chain through competitiveness, contractual measures to secure outcomes, flexibility, reach back support and market innovation. This will also inform plans under the current Target Operating Model update. This is particularly relevant to the resourcing of a Sustainable Design Specialist where this may not be a specific individual but could be an organisation (or combination of the two).

At present, staff resourcing has been developed to address the initial need to complete climate impact modelling and develop a buildings Resilience Action Plan. As the CAS progresses (informed by Year 1) a key review point will be to evaluate resourcing requirements as this may change depending on service outcomes. This review will be managed and guided by the Senior Responsible Officers and the Buildings Chief Officer Group.

Risk Management

Table 3 illustrates the key risks identified for this Project Plan. It is recognised that some of these will be universal across the four building Action Areas. Therefore, it is important that mitigations and solutions are matched up to ensure they are addressed at the programme level.

It is expected that the role of the Sustainability Lead will be to manage these risks across the four Action Areas so that comparative risk analysis can be completed, risks can be stress tested to quantify their impact on meeting carbon targets and mitigations aligned to ensure a holistic approach.

Table 3 - Risk Management, RAID analysis

| Ref: | Description | Type | Criticality | Proposed mitigation |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R-1 | Delays in Governance and sign off result in carbon savings being realised later than planned. | Risk | Critical | <ul style="list-style-type: none"> • Programme Management Approach to be considered. • Stakeholder Engagement approach detailed below. • Internal Governance requirements to be mapped for Tasks at mobilisation. • Reporting cycles to be mapped for each Task on mobilisation. |
| R-2 | Planned stock changes, need to perform at least as predicted by the Arup model. | Risk | Critical | <ul style="list-style-type: none"> • Ongoing risk management approach to be incorporated in Delivery Approach. • Mitigated by implementing Design Standards quickly. |
| R-3 | Design standards are not successfully embedded and implemented into The Corporation’s processes and procedures. | Risk | Critical | <ul style="list-style-type: none"> • Dedicated staff resource identified. • Stakeholder Engagement approach detailed below. • Soft landings and Post Occupancy Evaluation to be employed. |
| R-4 | Delays during mobilisation mean Design Standards are implemented later than planned. | Risk | High | <ul style="list-style-type: none"> • Delivery Approach identified above. • Programme Management Approach to be considered. • Stakeholder Engagement approach detailed below. |
| R-5 | Project Teams may be resistant to results of Post Occupancy Evaluation where buildings may not have performed well in operational energy terms or other operational outcomes. | Risk | Medium | <ul style="list-style-type: none"> • Stakeholder engagement to create a culture POE results can be openly discussed and acknowledged. |
| R-6 | The emerging Part L and London Plan may result in activity being completed in parallel or work overtaking this Action Area. | Risk | Medium | <ul style="list-style-type: none"> • Project Schedule to be reflective of these updates (where known). • Sustainability Lead to work with relevant departments to draw activity together. |
| A-1 | Lifecycle costs come out of existing budgets; not additional funding as identified in CPG. | Assumption | High | <ul style="list-style-type: none"> • Delivery Approach needs to consider how gap funding requirements will be addressed. |
| I-1 | Benefits aren’t quantified at present. | Issue | Medium | <ul style="list-style-type: none"> • Staff resource to establish process for benefits quantification. |
| D-1 | Lifecycle works are completed at sufficient scale and pace to allow the design standards to take effect e.g. assets are not “sweated”. | Dependency | High | <ul style="list-style-type: none"> • Stakeholder Engagement approach detailed below. • Staff resource identified to manage this Project Plan. • |

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| | | | | |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D-2 | Lifecycle works up to 2027 will support achievement of the net zero carbon target e.g. life expired system will be replaced with energy efficient/low carbon alternatives. | Dependency | Medium | <ul style="list-style-type: none"> • Mitigated by Design Standards. |
| D-3 | Dependant tasks must be completed on time. Year 1 tasks must be complete on time to action tasks from year 2 onwards. | Dependency | Medium | <ul style="list-style-type: none"> • Robust Project Schedule developed. • Project Controls in place (see below). • Ensure sufficient staff resource and budget in place to complete Year 1 tasks |

Stakeholder Engagement

The following table outlines the key stakeholders, how and when we intend to interact with them and what channels will be used.

Table 4- Stakeholder engagement

| Category: | Department / Who | Message | Channels | When |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Internal Stakeholders - Department | Chamberlains (Financial) Chamberlains (Procurement) City Surveyors (Chief Officer, CPG, PPG, Energy, Resilience, Climate Team, Environmental Resilience Team, CAS Programme Team.) Legal Possibly DBE Building control Development management | Engage, Inform, Consult, Validate | Tried and tested Climate Chats Interviews Team meetings 1:1 meetings | Needs minimum 6 week lead in time before referring to Committee. Internal liaison through programme and project lifecycles |
| Internal Stakeholders - Committees | Corporate Project Board Project Sub Committee P&R Committee RASC Court (where complex) Buildings Chief Officer Group Cyclical Works Board Housing Board | Seek Approval | Tried and tested Presentations at regular meetings Committees | Gateways 1, 2, combined 3 & 4 (4b where relevant), 5 and 6 |
| External | Funders | Seek Offers, Inform | Regular partnership meetings Funding opportunities | Concurrent with gateway 4 (RIBA Stage 2, 3, 4, 5 & 6) At required times gateway 2-6 |
| External | Residents Building Users | Engage, Inform, Collaborate | Consultation surveys Interviews Meetings Website Social media | (At required times in RIBA stage 3, 4, 5 and 7) At required times gateways 3-5 |
| External | Building Managers Facilities Managers | Engage, Seek information, Validate, Inform | Consultation 1:1 meetings | (At required times in RIBA stage 2, 3, 4 and 7) At required times gateways 3-6 |
| External | Supply Chains | Engage, Seek information, Inform | Consultation 1:1 meetings Link with CAS project plan for Purchased Goods and Services | RIBA Stage 1, 2, 3, 4, 5, 6 and 7 At required times gateways 2-6 |
| External | External Consultants (design) and Contractors (surveys, design and works) | Engage, Seek Information, Collaborate, Commission | Consultation Partnership meetings | RIBA Stage 1, 2, 3, 4, 5, 6 and 7 At required times gateways 1-6 |

| | | | | |
|-----------------|-------------------|---------------------------------------------------|--------------|----------------------------------------------------------|
| External | Major Contractors | Engage, Seek Information, Collaborate, Commission | Consultation | RIBA Stage 4 and 5 At required times gateways 4 and 5 |
|-----------------|-------------------|---------------------------------------------------|--------------|----------------------------------------------------------|

Reporting cycle

It is assumed that projects will evolve from the master programme of works. It is envisaged that projects will, in the majority, follow the ‘regular’ project route but some may fall under the ‘complex’ route. The table below identifies reporting envisaged along with intended reporting benefits:

Table 5 – Reporting cycle

| Category: | When | Benefit Realised |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Internal Stakeholders (Internal Departments) | Throughout project lifecycle, Gateways | <ul style="list-style-type: none"> Obtaining advice and feedback. Output monitoring Governance checks |
| Internal Stakeholders (Buildings Chief Officer Group (BCOG)) | Throughout project lifecycle, Gateways via the Programme Function and progress to KPIs via the CAS Dashboard | <ul style="list-style-type: none"> Commitment 2: To support the creation of a consistent format and content for effective progress reporting at monthly Chief Officer Group and quarterly Committee meetings from 1 April 2021. |
| Internal Stakeholders (Committees) | Gateways 1, 2, combined 3 & 4 (4b where relevant), 5 and 6 | <ul style="list-style-type: none"> Tracking and monitoring of project outputs and objectives. Escalation of issue management. Seeking project direction required. Governance checks |
| External (Funding) | Concurrent with gateway 4 (RIBA Stage 2, 3, 4, 5 & 6) At required times gateway 2-6 | <ul style="list-style-type: none"> Known funding outcomes. Progress reporting against funding elements incl. tracking of progress Lessons learned from other projects or best practice |
| External (Residents & Users) | (At required times in RIBA stage 3, 4, and 7) At required times gateways 3-5 | <ul style="list-style-type: none"> Keeping all informed and engaged Informing of methodologies and outputs intended – Involving residents and user’s ideas Informing of methodologies and outputs intended – Involving residents and users by allowing people to voice their views Informing of methodologies and outputs intended – how people can play their part. Positive reputational image |
| External (Building Managers and FM) | (At required times in RIBA stage 2, 3, 4 and 7) At required times gateways 3-6 | <ul style="list-style-type: none"> In-depth knowledge sharing Lessons learning – what works and what works less than envisaged Watch Points sharing - Specific building usage / information that could help or hinder projects. |
| External (Supply chains) | RIBA Stage 1, 2, 3, 4, 5, 6 and 7. At required times gateways 2-6 | <ul style="list-style-type: none"> Gathering market intelligence and information Complying with Statutory consents |
| External (Consultants & Contractors) | RIBA Stage 1, 2, 3, 4, 5, 6 and 7 At required times gateways 1-6 | <ul style="list-style-type: none"> Obtaining advice. Receiving specialist design knowledge and sharing Specific technological information and expertise Additional resource to assist existing teams |

| | | |
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| External (Major contractors) | RIBA Stage 4 and 5 At required times gateways 4 and 5 | <ul style="list-style-type: none"> • Obtaining advice. • Receiving specialist design knowledge and sharing • Specific technological information and expertise • Additional resource to assist existing teams |
|-------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Project Controls

The following Key Performance Indicators (KPIs) will be defined and tracked by this Project in order to judge its overall delivery success. Each will be tracked on a quarterly basis for qualitative (initially) and move toward quantitative progress reporting and will be reported formally in the Annual Report each year starting FY22/23.

Project-level Key Performance Indicators (KPIs)

The below table sets out the principal KPIs that will track the delivery of the four CAS headline targets listed below. A trajectory and set of milestone target dates are to be developed for each.

1. Net zero by 2027 in the City Corporation’s operations
2. Net zero by 2040 across the City Corporation’s full value chain
3. Net zero by 2040 in the Square Mile
4. Climate resilience in our buildings, public spaces and infrastructure

Reporting KPIs are intended to be refreshed as part of the annual cycle of baseline re-assessment work beginning in FY22/23. The Management KPIs will be refreshed more regularly and will be reported via the Climate Performance Dashboard to committees from FY21/22.

Table 6 – Reporting KPIs

| KPI name | Definition | Relevant CAS target | Regularity of reporting |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| IPG Scope 3 emissions | <ul style="list-style-type: none"> • Reduction in Scope 3 emissions. | Net zero by 2040 across the City Corporation’s full value chain | IPG Scope 3 emissions |
| Achievement of net zero technology standards | <ul style="list-style-type: none"> • Percentage of projects achieving net zero technology standards. | Net zero by 2027 in the City Corporation’s operations – Scope 1 and 2 | Annually |
| Post occupancy evaluation | <ul style="list-style-type: none"> • Number of Post Occupancy Evaluations complete | Net zero by 2027 in the City Corporation’s operations – Scope 1 and 2. Climate resilience in our buildings, public spaces and infrastructure | Annually |
| Achievement of standards | <ul style="list-style-type: none"> • Percentage of new buildings achieving design standards. | Net zero by 2027 in the City Corporation’s operations – Scope 1 and 2 Climate resilience in our buildings, public spaces and infrastructure | Annually |
| | <ul style="list-style-type: none"> • Percentage of refurbishments achieving design standards | Net zero by 2027 in the City Corporation’s operations – Scope 1 and 2 Climate resilience in our buildings, public spaces and infrastructure | Annually |
| | <ul style="list-style-type: none"> • Percentage of minor works projects where technology standards have been applied | Net zero by 2027 in the City Corporation’s operations – Scope 1 and 2 | Annually |

| | | | |
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| | | Climate resilience in our buildings, public spaces and infrastructure | |
| Lifetime embodied carbon | <ul style="list-style-type: none"> The total lifetime embodied carbon in new buildings (CO₂e embodied / m³). | Net zero by 2040 across the City Corporation's full value chain Net zero by 2040 in the Square Mile | Annually |
| | <ul style="list-style-type: none"> Total lifetime embodied carbon against industry benchmark. Guidance on methodology has been published by GLA (WLC)², LETI³ and UKGBC⁴. (an appropriate benchmark is to be identified). | Net zero by 2040 across the City Corporation's full value chain Net zero by 2040 in the Square Mile | Annually |
| Energy | <ul style="list-style-type: none"> Weighted average EPC for CPG Weighted average EPC for IPG | Net zero by 2027 in the City Corporation's operations – Scope 1 and 2 | Annually |
| Materials circularity indicator | <ul style="list-style-type: none"> Material from circular sources: recycled content or renewable content according to source e.g. reused material, remanufacture material etc. Expressed as a percentage (%) of total material. | Net zero by 2040 across the City Corporation's full value chain Net zero by 2040 in the Square Mile | Annually |
| Soft landings | <ul style="list-style-type: none"> Percentage of projects using a soft landings approach. | Net zero by 2027 in the City Corporation's operations – Scope 1 and 2 | Annually |
| Post Occupancy Evaluation | <ul style="list-style-type: none"> Average occupant satisfaction score following POE | Net zero by 2027 in the City Corporation's operations – Scope 1 and 2 | Annually |
| | <ul style="list-style-type: none"> Percentage of actions implemented following identification of opportunities for improvement | Net zero by 2027 in the City Corporation's operations – Scope 1 and 2 | Annually |

Key Data and Information

Documentation and process controls will be improved to allow for future audit and quality assurance measures such as alignment to best practice international standards on climate reporting.

The Sustainability Lead will develop a data maturity strategy to increase data accuracy and completeness, ensure integration of key data across key workstreams and provide clear data governance and performance management going forward. This will also include data and information requirements that will extend to any outsourced work to provide assurance on quality. For example, this could include that all reporting is aligned against industry standards such as the [Bath Inventory of Carbon and Energy \(ICE\)](#).

As this project progresses data will be generated as to the effectiveness of interventions. Further KPIs and targets may be periodically linked to the efficacy of measures and their overall contribution to the CAS. This will be subject to the Change Control Procedure.

The data generated by this project will be collated and displayed through Power BI dashboards to improve accessibility and understanding for a range of audiences.

Internal Governance

- Net Zero and Resilient Buildings Centre of Excellence to report to Buildings Chief Officer Group;

² https://www.london.gov.uk/sites/default/files/wlc_guidance_april_2020.pdf

³ <https://www.leti.london/ec-workstream>

⁴ <https://www.ukgbc.org/wp-content/uploads/2017/09/UK-GBC-EC-Developing-Client-Brief.pdf>

- Action Area Chief Officers and Senior Accountable Climate Leads to report to Buildings Centre of Excellence;
- Lead officers to report to Action Area Chief Officer and Senior Accountable Climate Lead;
- Proposed Project Board (Extraordinary Board) where required for cost and progress updates under the holistic Capex cost allowance;
- Internal Stakeholders (all gateway reports) - informal project updates and formal gateways reports ahead of submission to Committees;
- Internal Stakeholders (all gateway reports) - informal project updates and formal gateways reports ahead of submission to Committees.
- Gateways 1, 2, combined 3 & 4, 5 and 6 submitted to Corporate Project Board, Project Sub Committee and P&R, RASC.
- Gateway 4b (where relevant) Court of Common Council.

APPENDIX 1: Task Breakdowns

| | | | | | |
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| Task | 1 - Whole life cycle emissions footprint and cost analysis | | | | |
| Outcome | Assessment of how current standards support net zero. Assessment of cost and carbon impact of potential interventions in capital projects. Toolkit for training purposes. | | | | |
| Responsible officer | Property Project Director | | | | |
| Description | <p>Analysis of industry standard life cycle emissions footprint and cost is a key enabling task to allow for future planning of cyclical asset replacement and for use in the development of design standards.</p> <p>To support long term financial savings, life cycle cost analysis will be completed and built into key decisions relating to the purchase and construction of future assets such as lease vs. buy, quality, performance, future proofing, durability and emissions. This will be incorporated into Corporation Policy, CHB financial decision making and departmental budget decisions and planning.</p> <p>This task will develop an assessment of cost and carbon impact of potential interventions in capital projects as well as an associated toolkit for training purposes. This task will provide the base for building the Net Zero Design Standards (new build) and the Net Zero Carbon Refurbishment Standards (see below).</p> <p>In addition, at present, there is a perception that current standards (e.g. BREEAM) are sufficient to achieve net zero. This is not necessarily the case and therefore this Task will address any gaps to make to make sure life cycle emissions and life cycle costs associated with construction and asset replacement are identified and addressed.</p> | | | | |
| Timescales | <p>Year 1 – Procurement of consultancy support, review and assessment of existing standards, gap analysis for achieving net zero, life cycle emissions and cost analysis and production of a toolkit for training.</p> <p>For further breakdown see Gantt Chart (Project Schedule).</p> <p><u>Key dependencies</u></p> <p>None.</p> | | | | |
| Costs | | Year | | | |
| | Cost - £k | 21/22 | 22/23 | 23/24 | 24/25 |
| | <i>Project specific consultancy</i> | £160 | - | - | - |
| | <i>Staff resource (outsourced)</i> | - | - | - | - |
| | Resource | £160 | - | - | - |
| | Capital | - | - | - | - |
| | TOTAL | £160 | - | - | - |
| Benefits | Enabling action for input into Tasks 2a, 2b and 2c | | | | |
| Assumptions | | | | | |

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| Task | 2a- Development of net zero technology standards |
| Outcome | Generate a suite of technical specifications for main technology areas to be used during maintenance, planned lifecycle and refurbishment works. |
| Responsible officer | Property Project Director |

| <p>Description</p> | <p>It is essential that planned refurbishments and the replacement of plant and systems at end of life positively contribute to net zero carbon and resilience requirements without the need for retrofit at a later date.</p> <p>This Task will generate a suite of technical specifications which common minor works and capital project types (e.g. commercial, retail and historic buildings) can utilise during retrofit and cyclical asset replacement. They will focus on the 2027 and 2040 net zero carbon targets and will incorporate the following necessary areas as follows:</p> <ul style="list-style-type: none"> • Whole life cycle emissions footprint; • Cost analysis; • Low-impact materials specifications; • Circular construction; • Commercial and operational viability of new design standards. <p>This Task will be informed by the Industry Standard review of life cycle carbon and cost analysis undertaken in Task 1 along with WELL Health and Well-being Standards. The Standards will be incorporated into corporate policies and procedures (procurement etc.) and used to determine strategic decisions in relation to the approach to asset investment via departmental budgets, capital bids and MTFs.</p> <p>The suite of documents developed should be flexible enough for use during full-scale retrofit as well as for use as individual standards across the wide range of building types and heritage status of assets owned by The Corporation. For example, a minimum benchmark shall be set for standards in lighting, space heating, water heating, air conditioning, etc. These benchmarks will act as a baseline with superior benchmarks set for use in buildings where they can be successfully implemented. The overall goal of these benchmarks will be towards cumulative savings of cost and carbon emissions across the set of buildings upon which the standards have been implemented.</p> <p>This task will also align with buying standards to ensure economies of scale.</p> <p>Outputs of this Task will direct project managers and suppliers to the optimum technology in terms of lifetime carbon. This could consider both embodied and operational carbon. The suite of standards will be accompanied by a training programme and gateway review to embed knowledge and process.</p> <p>The standards will be aligned with the principles of The Corporation’s overarching Circular Economy Strategy, and will provide detail on circular design, procurement, construction and refurbishment.</p> <p>This task will be internally managed by an additional technical specialist (see Task 6).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>Timescales</p> | <p>Year 1 – Procurement of consultancy support, generate a suite of technical specifications for main technology areas addressing any gaps as identified by Task 1, development of toolkit and associated training.</p> <p>Year 3 – Update of standards to incorporate user feedback and any changes in industry standards.</p> <p>For further breakdown see Gantt Chart (Project Schedule).</p> <p><u>Key dependencies</u></p> <p>Task 1.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Costs</p> | <table border="1"> <thead> <tr> <th rowspan="2">Cost - £k</th> <th colspan="4">Year</th> </tr> <tr> <th>21/22</th> <th>22/23</th> <th>23/24</th> <th>24/25</th> </tr> </thead> <tbody> <tr> <td><i>Project specific consultancy</i></td> <td>£350</td> <td>-</td> <td>£30</td> <td>-</td> </tr> <tr> <td><i>Staff resource (outsourced)</i></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Resource</td> <td>£350</td> <td>-</td> <td>£30</td> <td>-</td> </tr> <tr> <td>Capital</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>TOTAL</td> <td>£350</td> <td>-</td> <td>£30</td> <td>-</td> </tr> </tbody> </table> | Cost - £k | Year | | | | 21/22 | 22/23 | 23/24 | 24/25 | <i>Project specific consultancy</i> | £350 | - | £30 | - | <i>Staff resource (outsourced)</i> | - | - | - | - | Resource | £350 | - | £30 | - | Capital | - | - | - | - | TOTAL | £350 | - | £30 | - |
| Cost - £k | Year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 21/22 | 22/23 | 23/24 | 24/25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project specific consultancy</i> | £350 | - | £30 | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Staff resource (outsourced)</i> | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Resource | £350 | - | £30 | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capital | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | £350 | - | £30 | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Benefits</p> | <p>Addresses any gaps as identified by Task 1.</p> <p>Identification of innovation and best practice to drive the adoption of low-impact materials and design efficiencies.</p> <p>Planned refurbishments and/or replacing plant and systems at end of life positively contribute to net zero carbon without the need for retrofit at a later date.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Assumptions | Whole life cycle carbon emissions and cost are incorporated into corporate policies and procedures. |
| | <ul style="list-style-type: none"> Existing Project Initiation Document assumes £400,000 for sustainable design standards (new build and refurb), and £300,000 for low-impact material specifications. This has been spread evenly across both Tasks 2a and 2b. |

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| Task | 2b - Development of net zero design standards for new developments and major refurbishments⁵ |
| Outcome | A suite of design standards to which new developments and major refurbishments can be designed, constructed and operated to. This includes whole life cycle emissions, sustainable and circular economy principles and low-impact material specifications. |
| Responsible officer | Property Project Director |
| Description | <p>New developments and major refurbishments need to positively contribute to net zero carbon and resilience requirements without the need for retrofit at a later date.</p> <p>This Task will generate a suite of design standards, covering the array of different building types operated by The Coporation, that will focus on the 2027 and 2040 net zero carbon targets and will incorporate the following areas as follows:</p> <ul style="list-style-type: none"> Assessment of the cost and carbon impact of potential interventions in new developments; Assessment and quantification of low-impact materials specifications; Generation of a suite of technical specifications to which new developments can be designed, constructed and operated to (including relevant environmental assessment criteria such as BREEAM, LEED etc.); Incorporate whole life cycle emissions, sustainable and circular design standards and low-impact material specifications; Incorporate Modern Methods of Construction; Provide a toolkit for training purposes. <p>This Task will be informed by the Industry Standard review of life cycle carbon and cost analysis undertaken in Task 1 along with WELL Health and Well-being Standards. These Standards will be integrated into corporate policies and procedures (procurement, etc.) and used to determine strategic decisions in relation to the approach to asset investment via departmental budgets, capital bids and MTFS.</p> <p>Outputs will direct project managers and suppliers to the optimum technology and design outcomes in terms of lifetime carbon and could consider both embodied and operational carbon. They will be accompanied by a training programme and gateway review to embed knowledge and process.</p> <p>This task will also align with buying standards to ensure economies of scale.</p> <p>The standards will be aligned with the principles of The Corporation’s overarching Circular Economy Strategy, and will provide detail on circular design, procurement, construction and refurbishment.</p> <p>This task will be internally managed by an additional technical specialist (see Task 6).</p> <p>It is noted that Community and Children’s Services have recently developed design standards for housing. Whilst these will need to be amended to reflect outcomes from this and the resilience workstreams, it is expected that the focus will not be on this building type although these will be reviewed to ensure standards are aligned. Furthermore, the Sustainable Design Expertise will gather any learnings from the current use of new housing standards on the Sydenham Hill Estate development to provide feedback into this Task.</p> |

⁵ For the purposes of the design standards, major refurbishment is defined as construction that results in the fundamental remodeling or adaptation of existing elements of the building envelope, structure and renewal of key building services. And where, on completion of the works, such remodelling/renewal will materially impact on the performance of the building.

The term ‘elements’ includes:

- Structural/building envelope elements including walls (including glazing), roofs (including rooflights) and floors.
- Building services elements including lighting (artificial and daylighting), heating, mechanical ventilation/cooling plant and ductwork, water/drainage systems.

| Timescales | Note: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | <p>Year 1 – Procurement of consultancy support, generate design standards addressing any gaps as identified by Task 1, development of toolkit and associated training.</p> <p>Years 3 – Update of standards to incorporate user feedback and any changes in industry standards.</p> <p>For further breakdown see Gantt Chart (Project Schedule).</p> <p><u>Key dependencies</u></p> <p>Task 1.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Costs | <table border="1"> <thead> <tr> <th></th> <th colspan="4">Year</th> </tr> <tr> <th>Cost - £k</th> <th>21/22</th> <th>22/23</th> <th>23/24</th> <th>24/25</th> </tr> </thead> <tbody> <tr> <td><i>Project specific consultancy</i></td> <td>£350</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td><i>Staff resource (outsourced)</i></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Resource</td> <td>£350</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Capital</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>TOTAL</td> <td>£350</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> | | Year | | | | Cost - £k | 21/22 | 22/23 | 23/24 | 24/25 | <i>Project specific consultancy</i> | £350 | - | - | - | <i>Staff resource (outsourced)</i> | - | - | - | - | Resource | £350 | - | - | - | Capital | - | - | - | - | TOTAL | £350 | - | - | - |
| | | Year | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Cost - £k | 21/22 | 22/23 | 23/24 | 24/25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <i>Project specific consultancy</i> | £350 | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <i>Staff resource (outsourced)</i> | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Resource | £350 | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Capital | - | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | £350 | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Benefits | Addresses any gaps as identified by Task 1. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Identification of innovation and best practice to drive the adoption of low-impact materials and design efficiencies. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Planned new developments positively contribute to net zero carbon without the need for retrofit at a later date. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Assumptions | Whole life cycle carbon emissions and cost are incorporated into corporate policies and procedures. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <ul style="list-style-type: none"> Existing Project Initiation Document assumes £400,000 for sustainable design standards (new build and refurb), and £300,000 for low-impact material specifications. This has been spread evenly across both Tasks 2a and 2b. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| Task | 2c - Assess performance of design and technology standards |
| Outcome | Assurance that Design Standards are performing as expected. Assurance that standards are fit for purpose. Update of standards where required. |
| Responsible officer | Property Project Director |
| Description | It will be critical to ensure any new design standards, material specifications and operational implications perform as expected and work in the current commercial marketplace. Therefore, this Task will include the review and assessment of the net zero technology standards and design standards as developed in Tasks 2a and 2b to ensure they are fit for purpose. This review will enable the successful implementation of the strategies across the identified assets in the Corporate and Investment Property Groups. |

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| Timescales | Synergies between the design standards and other buildings aspects of the CAS (particularly resilience) will be crucial to ensure successful development and deployment of these standards including the assessment of how they are performing. The Delivery Approach proposed above outlines how these areas will be coordinated. | | | | |
| | <p>Year 2-4 – Assess performance of new design standards. For further breakdown see Gantt Chart (Project Schedule). <u>Key dependencies</u> Task 2a and 2b.</p> | | | | |
| Costs | | Year | | | |
| | Cost - £k | 21/22 | 22/23 | 23/24 | 24/25 |
| | <i>Project specific consultancy</i> | - | - | -- | - |
| | <i>Staff resource (outsourced)</i> | <i>Outsourced resource as per Task 6</i> | | | |
| | Resource | Outsourced resource as per Task 6 | | | |
| | Capital | - | - | - | - |
| | TOTAL | Outsourced resource as per Task 6 | | | |
| Benefits | Feedback loop for future standards. Verification that standards are performing as expected. Maximising of savings through optimising the approach. | | | | |
| Assumptions | This Task will be part of the remit of the Sustainable Design Specialist (Task 5). | | | | |

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| Task | 3 – Develop approach to Soft Landings and Post Occupancy Evaluation |
| Outcome | Development approach to soft landings and post occupancy review. |
| Responsible officer | Operations Group Director |
| Description | <p>There is a broad consensus that buildings in operation often do not perform to the level as designed. This is particularly true for the “performance gap” where there is a frequent disparity between predicted energy use and carbon emissions in the design stage and the actual energy use of assets in operation. This is often exacerbated by a separation between the construction and operation phases of a project.</p> <p>By developing a soft landing approach, The Corporation will be able to ensure a smooth transition from implementation to operation, ensuring performance is optimised. This Task will work to identify how a soft landings approach can be embedded within project stages (not just at handover) so that an appropriate resources can be allocated and that outcomes and requirements are defined.</p> <p>Linking this with Post Occupancy Evaluation (POE) will provide a standardised approach across the estate to enable stakeholders to identify and evaluate critical aspects of building performance following implementation. This will allow the identification and addressing of any problem areas, provide feedback on interventions and support a loop for continual improvement on which to develop future design standards and criteria for future phases of work.</p> |
| Timescales | <p>Year 2 - Planned for 2022/23 as requires input from other Tasks. However, if the opportunity to incorporate soft landings/POE in to a live project arises beforehand, the options to bring this Task forward will be explored.</p> <p>For further breakdown see Gantt Chart (Project Schedule). <u>Key dependencies</u> Task 2a and 2b.</p> |

| | Cost - £k | Year | | | |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------------|-------|-------|
| | | 21/22 | 22/23 | 23/24 | 24/25 |
| Costs | <i>Project specific consultancy</i> | - | £100 | - | - |
| | <i>Staff resource (outsourced)</i> | - | - | - | - |
| | Resource | - | £100 | - | - |
| | Capital | - | - | - | - |
| | TOTAL | - | £100 | - | - |
| Benefits | Development of an embedded process for soft landings throughout project lifecycle. | | | | |
| | Optimised savings through thorough commissioning and handover. Addresses the “performance gap” where there is a frequent disparity between predicted energy use and carbon emissions in the design stage and the actual energy use of those assets in operation Feedback loop for future Design Standards. | | | | |
| Assumptions | | | | | |

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| Task | 4 - Circular construction / low-embodied emissions pathfinder project | | | | |
| Outcome | Delivery of circular construction / low-embodied emissions project | | | | |
| Responsible officer | Property Project Director | | | | |
| Description | Using the outcomes from the previous Tasks, this pathfinder project will provide a test bed to implement a circular construction, low-embodied emissions project, demonstrating best practice towards achievement of the CAS targets. | | | | |
| | By conducting this pathfinder project, it is expected that The Corporation will be able to gather lessons learnt through physical implementation of the standards to provide feedback prior to full roll-out. To support this a current planned project will be identified to ensure there is no lag on delivery and implementation can be dovetailed into existing plans. It is expected that this task would be managed by additional technical specialist (see Task 6). | | | | |
| Timescales | Years 2 - 4 - Circular construction / low-embodied emissions pathfinder project. | | | | |
| | For further breakdown see Gantt Chart (Project Schedule). <u>Key dependencies</u> Task 1 to 3. | | | | |
| Costs | | Year | | | |
| | Cost - £k | 21/22 | 22/23 | 23/24 | 24/25 |
| | <i>Project specific consultancy</i> | - | - | - | - |
| | <i>Staff resource (outsourced)</i> | - | - | - | - |
| | Resource | - | - | - | - |
| | Capital | - | Capital funding dependent | | |
| TOTAL | - | Capital funding dependent | | | |
| Benefits | Opportunity to testing design standards and soft landings/POE approach Gathering of lessons learnt. Provision of a feedback loop to inform future updates. Opportunity to tackle a “hard to treat” and/or historic building. | | | | |
| Assumptions | Assumes capital will be covered by the new development / refurbishment budget as The Corporation sees this not as an additional task but one that needs to be embedded into standard ways of working. | | | | |

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| Task | 6 – Appoint specialist resource | | | | |
| Outcome | Resourcing of Sustainable Design Specialist | | | | |
| Responsible officer | Property Project Director | | | | |
| Description | <p>Recruitment of sustainable design expertise to form the core of the extended team to lead Tasks identified above, co-ordinate consultancy activity and supporting departments in the delivery of carbon reduction interventions.</p> <p>To successfully achieve the Task outcomes, it is important that there is organisational reach back to a wider pool of specialisms e.g. architecture, BREEAM, circular economy, embodied carbon, MEP, structural, sustainable materials etc to encompass the breadth of expertise required for this action area. Therefore, the procurement approach for this role should reflect that this may not be a specific individual but could be an organisation (or combination of the two).</p> | | | | |
| Timescales | <p>Year 1 – Resourcing of Sustainable design specialist</p> <p><u>Key dependencies</u></p> <p>None.</p> | | | | |
| Costs | | Year | | | |
| | Cost - £k | 21/22 | 22/23 | 23/24 | 24/25 |
| | <i>Project specific consultancy</i> | - | - | - | - |
| | <i>Staff resource (outsourced)</i> | £55 | £110 | £110 | £110 |
| | Resource | £55 | £110 | £110 | £110 |
| | Capital | - | - | - | - |
| | TOTAL | £55 | £110 | £110 | £110 |
| | Benefits | <p>Enabling action for identifying and managing Tasks above.</p> <p>Ongoing management, updating and embedding of design standards.</p> <p>Coordination and linking of design standards with resilience workstreams.</p> | | | |
| Assumptions | <ul style="list-style-type: none"> Assumed average cost of £110k/annum/FTE for this resource level. Resources to start six months into Year 1, hence costs of £55k. | | | | |