GREATER**LONDON**AUTHORITY

REQUEST FOR ASSISTANT DIRECTOR DECISION – ADD2488

Title: 'Roofs Designed to Cool' Programme

Executive Summary:

To procure consultancy support to establish an evidence base and implementation mechanism for cooling London's existing homes and buildings and reducing intensification of the Urban Heat Island. This work will develop the evidence base for increasing coverage of 'roofs designed to cool', and setting out a three-phased approach to: 1) make London's existing homes and buildings resilient to climate impacts; 2) make London's public realm greener and cooler; and, 3) reduce the intensification of the Urban Heat Island. The work will take account of opportunities to support jobs and the potential to develop a 'Roofs Designed to Cool' retrofit programme.

The Green New Deal (GND) Mission sets the challenges of tackling the climate and ecological emergencies and improving air quality by doubling the size of London's green economy by 2030 to accelerate job creation for all. The Missions themes include decarbonising and transforming the built environment and greening London's transport and public realm. This work supports these two ambitions.

The proposal supports leading to a cleaner, greener London and narrowing the social, economic and health inequalities, two outcomes of the London Recovery Programme and the cross-cutting theme of improving the health and well-being Londoners.

Decision:

That the Interim Assistant Director of Environment approves:

> The procurement of a consultancy service of up to £20,000 to carry out the activities associated with the programme titled, 'Roofs Designed to Cool'.

This work will develop the evidence base for increasing coverage of 'roofs designed to cool', and setting out a three-phased approach to: 1) make London's existing homes and buildings resilient to climate impacts; 2) make London's public realm greener and cooler; and, 3) reduce the intensification of the Urban Heat Island. The work will take account of opportunities to support jobs and the potential to develop a 'Roofs Designed to Cool' retrofit programme.

AUTHORISING ASSISTANT DIRECTOR/HEAD OF UNIT

I have reviewed the request and am satisfied it is correct and consistent with the Mayor's plans and priorities.

It has my approval.

Name: Pete Daw	**Position:** Interim Assistant Director, Environment & Energy
Signature: 	**Date:** 18 January 2021

PART I - NON-CONFIDENTIAL FACTS AND ADVICE

Decision required – supporting report

1. Introduction and background

1.1 The Mayor has established a London Recovery programme that aims to restore confidence in the city, minimise the impact on communities and build back better the city's economy and society. Two central outcomes are to deliver a cleaner, greener London and to narrow social, economic and health inequalities. As part of the Recovery programme, the Green New Deal Mission aims to double London's green economy by 2030 to support tackling the climate and ecological emergencies and air pollution, while creating jobs. By taking action to tackle these environmental priorities, the Mission also tackle social and health inequalities in London caused by their impacts.

1.2 Global average temperatures have risen by over 1°C since 1850. If the world continues emitting greenhouse gases at today's levels, then average global temperatures could rise by up to 5°C by the end of this century. Average temperatures in London are already getting higher.

1.3 Projected increases in average monthly temperatures in London until 2050 show a 5 - 6°C increase in summer and winter averages. This will have an impact on health infrastructure, comfort, and the operation of the city. As demand for cooling increases, there may be stresses on power supply networks, with increasing electricity demand threatening London's sustainability. Increases in temperature will have consequences for public health, particularly for 'at risk' groups.

1.4 London also generates its own microclimate, known as the Urban Heat Island (UHI), which can result in the centre of London being up to 10°C warmer than rural areas outside the city. The temperature difference is usually higher at night than during the day. Within the UHI, there are microclimates too. Increased development, population growth and urbanisation have the potential to intensify the UHI effect and increase temperatures, alongside climate change.

1.5 It is not clear if climate change itself will increase or decrease intensification of the UHI. However, the UHI is another temperature increment on top of the expected rise due to climate change.

1.6 The proposal supports leading to a cleaner, greener London and narrowing the social, economic and health inequalities, two outcomes of the London Recovery Programme and the cross-cutting theme of improving the health and well-being Londoners.

1.7 In December 2018 the Mayor declared a climate and ecological emergency and released one of the world's first climate action plans that was compatible with a 1.5^0C degree pathway in support of the Paris Agreement.

Learning from other cities and staff resources

London can learn from other international cities.

1.8 In New York City, the 'Cool Roofs' project has resulted in more than 10 million square feet of roofs painted. In 2018, 73 percent of New York's cool roof interventions were in areas identified as having high proportions of vulnerable residents. The city is currently targeting about one million square feet of rooftops every year. Surveys of US cities have found that city-wide installation of cool roofs, pavements, and trees can reduce ambient air temperature by 2 to 4 degrees Celsius during the warmer summer months, (Ref: C40 Good Practice Guide Cool Cities, 2016). New York City's at risk environment is characterised by dense concentrations of people, buildings, and resources, including some of the largest underground transportation and utility systems in the world. In developing a risk assessment system, New York has tailored the standard equation to meet the City's needs. "Vulnerability" is determined by a building's adjacency, accessibility, and structural performance. (Ref: https://www1.nyc.gov/assets/orr/pdf/Cool_Neighborhoods_NYC_Report.pdf)

1.9 Whilst the focus of this project phase is on the use of reflective roofs designed to cool homes and buildings, other examples of roof types and benefits will be explored including projects in Chicago and Los Angeles.

1.10 The work will explore evidence and approaches from other cities, to develop the business case for increasing coverage of 'roofs designed to cool' in London and reduce the impacts of the urban heat island effect.

1.11 Staff resources have been identified within the GLA's Climate Change team to manage and take forward the project. The successful bidder will also be expected to work with various GLA teams to access data and information that could inform the design of a retrofit programme.

2. Objectives and expected outcomes:

Objectives:

2.1 The Green New Deal (GND) Mission sets the challenges of tackling the climate and ecological emergencies and improving air quality by doubling the size of London's green economy by 2030 to accelerate job creation for all. The Missions themes include decarbonising and transforming the built environment and greening London's transport and public realm. This work supports these two ambitions.

2.2 The proposal supports leading to a cleaner, greener London and narrowing the social, economic and health inequalities, two outcomes of the London Recovery Programme and the cross-cutting theme of improving the health and well-being Londoners.

2.3 This work will develop the evidence base for increasing coverage of 'roofs designed to cool', by setting out a three-phased approach to: 1) make London's existing homes and buildings resilient to climate impacts; 2) make London's public realm greener and cooler; and, 3) reduce the intensification of the Urban Heat Island. The work will take account of opportunities to support jobs and the potential to develop a 'Roofs Designed to Cool' retrofit programme.

2.4 The aim of the project and expectations of the supplier are, to establish the evidence for increasing coverage of roofs designed to cool existing homes and buildings in London. This should include a quantitative assessment of how a 'Roofs Designed to Cool' retrofit programme could act to mitigate the risk of existing homes and buildings overheating. The focus should be on informing the development of a 'Roofs Designed to Cool' retrofit programme for London's existing homes and buildings. Specific details on the approach can be found in the 'General' section of this scope.

2.5 Establish an assessment of and evidence for the co-benefits that a 'Roofs Designed to Cool' retrofit programme could have on reducing the intensification of the Urban Heat Island (UHI) and job creation.

2.6 Establish the mapping and/or any modelling that would be required to a) assess how a 'Roofs Designed to Cool' retrofit programme could mitigate the risk of existing homes and buildings overheating; where roofs could be installed and which types of homes/buildings are vulnerable to overheating; and, b) an assessment of and evidence for the co-benefit that a 'Roofs Designed to Cool' retrofit programme could have on reducing the intensification of the UHI. The outcomes will be used to support the potential to develop a 'Roofs Designed to Cool' retrofit programme.

2.7 Make a recommendation, supported by evidence, of the value of retrofitting non-residential buildings as well as dwellings, (for example, the impact on local UHI or reduced energy demand in buildings with mechanical cooling), and consideration of how this would fit in to a delivery plan. The delivery plan will inform the work of subsequent phases. It is anticipated that the financial funding for

subsequent phases will be met from the Green New Deal; and staff resources will be deployed from the climate change team based in the GLA's environment team.

Expected Outcomes:

2.8 Evidence demonstrating how a 'Roofs Designed to Cool' retrofit programme' could mitigate the risk of existing homes and buildings overheating.

2.9 Illustrate and, if possible, quantify the contribution that a 'Roofs Designed to Cool' retrofit programme could have on reducing the intensification of the UHI, strategically and locally.

2.10 Set out benefits, challenges, opportunities and practical considerations of delivering a 'Roofs Designed to Cool' retrofit programme in London, including a methodology for identifying those buildings most at risk of overheating which would benefit from a cool roof retrofit.

2.11 Provide an assessment of the impact of job creation through the establishment of the retrofit programme. Consideration should be given to how much a programme might align with existing retrofit programmes to create efficiencies in delivery.

Price

2.12 The price set is based on the price set for commensurate projects.

How the service will be procured

2.13 Given the value of the contract (E20K) the procurement will be managed by GLA officers following TfL Commercial team guidance. In line with procurement guidance we will invite 3-4 organisations to tender who have the expertise and experience to undertake the work.

3. Equality comments

3.1 Under Section 149 of the Equality Act 2010, as a public authority, the Mayor of London must have 'due regard' of the need to eliminate unlawful discrimination, harassment and victimisation as well as to advance equality of opportunity and foster good relations between people who have a protected characteristic and those who do not.

3.2 Gender Equality and Equality of Opportunities are enshrined within the GLA's programmes and activities according to the Mayor's Framework for Equal Life Chances (June 2014) and the Mayor's Diversity and Inclusion Strategy. The framework aims to bring Londoners together rather than dividing them. It promotes outcomes for a diverse range of communities that seek to ring real changes to the quality of Life for Londoners. The Environment projects and programmes stem from the current work of the London Environment Strategy (LES) which is informed by a full Integrated Impact Assessment which includes a consideration of equalities.

3.3 As a result, Environment projects and programmes look to maximise their positive impact on all Londoners, through for example, reducing the health impact of air quality, reducing fuel poverty, maximising energy security while keeping bills down, through to ensuring the resilience of London's critical infrastructure and protecting vulnerable communities.

4 Other considerations

Key risks and issues

4.1 Delays in undertaking any of the above activities (due to not having budgets and/or contracts in place) could lead to delays in delivery that could have a negative reputational risk on the Mayor. The timeline and expected cost for all activities have been reviewed. In addition, a risk register will be drawn up for the project to identify and monitor risks.

Links to Mayoral strategies and priorities

4.2 This project has direct links to the priorities of the London Recovery Board and specifically its Green New Deal mission, which aims to double the size of London's green economy by 2030 as set out in Section 1 and 2.

4.3 The project has direct links to many of the Mayor's Strategies including: the London Environment Strategy LES), the new London Plan. Each of these strategies have been consulted on and have policies aimed at addressing the environmental issues faced in London. A summary of the relevant objectives and policies in those strategies are reference below.

4.4 In the new London Plan policy S14 Managing Heat Risk, whilst the focus is on new developments, the proposal includes low energy measures that can mitigate overheating risk such as solar shading and the use of green infrastructure to shade roof surfaces. Objective 8.4 of the LES, states that 'London's people and infrastructure are better prepared and more resilient to extreme heat events'. The associated proposals include reducing intensification of the UHI; and, that, the Mayor will work to minimising overheating in existing buildings through the Energy for Londoners energy efficiency programmes.

4.5 The design of the policies set out in the LES will benefit all Londoners, but due to the unequal impacts of climate change on the most vulnerable Londoners, there is likely to be a positive effect in tacking social and health inequality of this project's activity.

4.6 No officer involved in the drafting or clearance of this form has any conflicts of interest to declare.

5. Financial comments

5.1 The estimated cost of £20,000 for this consultancy project will be funded from the 2020-21 Climate Change Adaptation budget held within the Environment Unit.

5.2 As this is a consultancy project, officers are advised to ensure that the conditions relating to the procurement of consultancy services as detailed within the Authority's Financial Regulations and the Expenses & Benefits Framework are adhered to.

5.3 This consultancy project is expected to be completed by the 31 March 2021.

6. Planned delivery approach and next steps

Activity	**Timeline**
Announcement	January 2021
Delivery Start Date	January 2021
Main milestones	Draft Report - February 2021
Main milestones	Finalised Report - February 2021
Final evaluation start and finish	Early March 2021
Delivery End Date	Mid-March 2021
Project Closure	Mid-March 2021

Appendices and supporting papers:
None.

Public access to information

Information in this form (Part 1) is subject to the Freedom of Information Act 2000 (FoIA) and will be made available on the GLA website within one working day of approval.

If immediate publication risks compromising the implementation of the decision (for example, to complete a procurement process), it can be deferred until a specific date. Deferral periods should be kept to the shortest length strictly necessary. **Note**: This form (Part 1) will either be published within one working day after it has been approved or on the defer date.

Part 1 - Deferral

Is the publication of Part 1 of this approval to be deferred? NO

If YES, for what reason: N/a

Until what date: (a date is required if deferring)

Part 2 – Sensitive information

Only the facts or advice that would be exempt from disclosure under FoIA should be included in the separate Part 2 form, together with the legal rationale for non-publication.

Is there a part 2 form – NO

ORIGINATING OFFICER DECLARATION:	Drafting officer to confirm the following (✓)
Drafting officer: Annette Figueiredo drafted this report in accordance with GLA procedures.	✓

Corporate Investment Board

This decision was agreed by the Corporate Investment Board on 18 January 2021.

ASSISTANT DIRECTOR OF FINANCIAL SERVICES:

I confirm that financial and legal implications have been appropriately considered in the preparation of this report.

Signature	**Date**
Anna Custance	18 January 2021