# 1. ORGANISATIONAL OVERVIEW

## 1.1 Transport for London (TfL)

TfL was created in 2000 as the integrated body responsible for London's transport system. TfL is a functional body of the Greater London Authority. Its primary role is to implement the Mayor of London's Transport Strategy and manage transport services to, from and within London.

TfL manages London's buses, the Tube network, Docklands Light Railway, Overground and Trams. TfL also runs Santander Cycles, London River Services, Victoria Coach Station, the Emirates Air Line and London Transport Museum. As well as controlling a 580km network of main roads and the city's 6,000 traffic lights, TfL also regulates London's taxis and private hire vehicles and the Congestion Charge scheme.

Further background on what TfL does can be found on the TfL website here:

**https://tfl.gov.uk/corporate/about-tfl/what-we-do**

## 1.2 Greater London Authority (GLA)

The Greater London Authority (GLA) is a top-tier administrative body responsible for the strategic administration of Greater London. It was created in 1999 and consists of a directly elected Mayor to represent London's interests and 25 members London Assembly with scrutiny powers, both elected on a four-yearly cycle. The GLA represents a strategic regional authority, with powers encompassing a range of policy areas, such as transport, economic development, and fire and emergency planning.
The Mayor is the executive of London's government. He works closely with and sets budgets for:

- The GLA
- Transport for London (TfL)
- The Metropolitan Police Authority (MPA)
- The London Fire & Emergency Planning Authority (LFEPA).

The Mayor also works closely with London's borough councils, who are responsible for providing many local services, to ensure that local and London-wide policies work together for maximum effect.

The Assembly scrutinises the Mayor's activities, questioning the mayor about his decisions. The Assembly can investigate other issues of importance to Londoners and make proposals to the Mayor. The London Assembly is made up of twenty-five members.

As a regional authority the GLA has many of the usual Local Government powers and constraints, and must comply with its own, under the 1999 Act.

## 1.3 Business Unit

The Mayor's London Environment Strategy was published in May 2018. The strategy takes an integrated approach focusing on creating a city that is healthy, resilient, fair and green as well as resource efficient (Greater London Authority, 2018).

The GLA's Air Quality team, sits within the GLA's Connectivity, Air Quality, Transport and Infrastructure unit, and is responsible, amongst other tasks, for the procurement of suppliers to deliver key programmes and associated project delivery tasks.

# 2. INTRODUCTION

## 2.1 **Background**

Poor air quality remains the greatest environmental risk to public health in the UK, and primary school children are one of the demographics most vulnerable to the effects. It can stunt the growth of their lungs, causing significant health problems in later life.

Through his London Environment Strategy, the Mayor has delivered a series of ambitious policies and programmes to improve air quality. These include London-wide interventions such as the ULEZ, and the electrification of the bus and taxi fleet. He is also delivering projects to improve air quality around schools through the rollout of over 400 school streets; and funding borough-led projects to reduce the impact of pollution on pupils through the Mayor's Air Quality Fund. These measures have helped cut the number of educational establishments with illegal levels of nitrogen dioxide ($NO_2$) pollution by 94 per cent – from 793 schools in 2016 to 50 in 2019 (the most recent year for which data is available).

Children are not only exposed to pollution outdoors, however. Indoor air quality is increasingly considered a key, but under-addressed issue and its relative importance continues to increase as outdoor air quality improves. The Chief Medical Officer's Annual Report for 2022 stressed this importance and highlighted that far more work and research is needed to tackle air quality in buildings where people spend over 80 per cent of their time.

The current World Health Organization (WHO) "safe" annual average guideline for $PM_{2.5}$ (considered the pollutant of greatest concern in London) is 5ug/$m^3$. Modelling for 2019 highlighted that that no primary school in London met this concentration: the average was 10.7ug/$m^3$. Modelling also indicates that no primary school is estimated to meet the WHO guideline in 2030. It is anticipated that by then the average will decrease to 8.8ug/$m^3$.

The Mayor remains committed to meeting WHO guidelines (which apply indoors for $PM_{2.5}$) and protecting the health of young Londoners.

To tackle the challenge of air quality at schools, the Mayor commissioned the school and nursery audit programme. These audits, conducted between 2017 and 2020, identified that indoor air purifiers could be a cost-effective intervention to improve air quality in classrooms and help protect the health of pupils.

In February 2024, the Mayor announced that £2.7m of funding would be committed to deliver the School Filter Project which aims to deliver cost-effective indoor air-

quality filters (**Please note**: the use of “filters” in this document refers to mains operated indoor air quality purifiers which principally use filter technology (such as HEPA filters) to trap particulates) across approximately 200 selected schools in London. Whilst this total was announced, our calculations are that this could provide filters for an excess of 200 schools as well as provision for ongoing maintenance and associated costs for several years afterwards.

This project will align with the following objectives and proposals committed in The London Environment Strategy:

- **Objective 4.1: “**Support and empower London and its communities, particularly the most disadvantaged and those in priority locations, to reduce their exposure to poor air quality.” This project would specifically address **proposal 4.1.1.b**: “The Mayor will aim to do more to protect London’s young and disadvantaged people by reducing their exposure to poor air quality, including at schools, nurseries, other educational establishments, care homes, and hospitals.”

- **Objective 4.3:** “Establish and achieve new, tighter air quality targets for a cleaner London by transitioning to a zero emission London by 2050, meeting World Health Organization health-based guidelines for air quality.” (This includes indoor settings, where the WHO guidelines apply.) This project would specifically address **proposal 4.3.4:** “Work to reduce exposure to indoor air pollutants in the home, schools, workplace and other enclosed spaces.”

## 2.2 Objectives

The key objective of this procurement is to deliver the Mayor’s School Filter Project. The key outcome of this project will be to install air quality filters in all classrooms across at least 200 selected schools in London (or in as many classrooms as practicable) to deliver reductions in $PM_{2.5}$ concentrations in classrooms and realise subsequent health benefits for pupils and staff. These schools will be selected based on local concentrations and deprivation indices and will be spread evenly across the whole of London.

The project will also need to deliver awareness raising and education with schools, as well as maintenance of the filters including filter replacements. It will also need a strong monitoring, evaluation and reporting component which will help to inform any further rollouts of filters once this project has concluded, and to ensure they are being effectively utilised.

# 3. SCOPE

## 3.1 General Requirement

- Provide and install indoor air quality filters to all classrooms across a minimum of 200 selected schools in London (or as many classrooms as practicable) These schools will be selected by and in partnership with the GLA, and will be spread across the whole of London.
- Maintain the filters as required for the project duration, including providing and installing filter replacements when needed. We will also require quotes that outline the cost for extensions of this project by three years and for more schools. Further details are set out in section 7 and in the pricing questions.
- Monitor (including providing, installing, and utilising indoor air quality monitors and data), evaluate and report (including providing annual and end of project reports) on the impact filters are having on air quality in terms of reducing $PM_{2.5}$ concentrations for the duration of the project. Monitor, report and evaluate other outcomes, including attendance. This will include an element of quality control to ensure the filters are working as intended and are optimised where possible including moving filters where they are underperforming or engaging with teachers and/or caretakers to ensure they are being used effectively. The provider should also make all data available to schools in a user-friendly manner, such as an online portal. A draft monitoring and evaluation outline with details on the types of monitoring required is included (Appendix 1). Bidders should provide an outline of how they will undertake and deliver this effectively. Bidders will also be expected to provide a full monitoring and evaluation plan.
- Plan and deliver awareness raising and educational activities in the schools, including through assemblies and classroom activities for the project duration. Link these activities in with other existing work by the GLA or boroughs where relevant to minimise duplication of work. Information on the types of activities we would like to see, with links to existing resources that could be used is set out under Deliverable 4. Engagement should utilise data from the indoor air quality monitors and any available outdoor air quality monitoring.
- Respond to enquiries or requests for support from schools regarding the filters for the project duration.
- The project and contract duration will be initially for 2 years. There will then be options for extension(s), subject to available budget and supplier's performance. The contract may be terminated after the first 12 months, exercising the termination clause, for example due to supplier's performance or if there is insufficient budget.

## 3.2 Equality Diversity and Inclusion

- Bidders are required to provide a detailed Equalities Diversity and Inclusion (EDI) methodology/policy. This will be evaluated against a social value/ responsible procurement score of 15%. Submissions which do not include an EDI methodology/policy will be rejected.
- In relation to this project, bidders are heavily encouraged to identify how they can ensure they work with schools in areas of higher deprivation where awareness and action around air quality and other environmental issues may not be as common as other schools. Bidders are encouraged to set out how they will focus engagement and provide more support to schools which may be in areas of higher deprivation and where engagement has previously been lower.
- A key factor in the selection of the schools is level of deprivation. The GLA is very keen for Supplier to support the GLA in ensuring that these priority schools are selected as far as practicable and ensure that benefits can be maximised in areas of higher deprivation and inequality. Clear justification for why certain selected schools will not be involved in the project will need to be provided.

## 3.3 Carbon reduction

- As part of the GLA's efforts to reduce carbon emissions from their activities, providers who can demonstrate that their products and services are associated lower emissions of carbon dioxide will be prioritised. For example:
    - The materials and manufacturing process used to create the filters are associated with relatively lower carbon emissions ie. The filters are manufactured more locally using low carbon energy.
    - The transport used for the project is low emission, for example using electric vans and lorries, or electric cargo bikes.
    - The materials used for the filters are reusable and recyclable at the end of their lifetime.
- Carbon reduction is incorporated in the social value/ responsible procurement score of 15%.

# 4. DELIVERABLES / MILESTONES

**Deliverable 1:** Provide and install effective indoor air quality filters in every classroom (or as many as practicable) across a minimum of 200 selected schools in London**.**

- Engage with schools as required to gain approval for the installation of indoor air quality filters. A list of schools to engage with will be provided by the GLA, however the Supplier is ultimately responsible for ensuring at least 200 schools are involved in this project. These schools will have been selected by the GLA based on metrics such as levels of deprivation and modelled air quality.
- Ongoing engagement with schools directly and through local authorities over email, calls and site visits as required to discuss the installation requirements and respond to concerns and questions. Develop and maintain relationships with key school contacts to ensure engagement is maintained as far as practicable. This will likely require gaining and maintaining buy in from headmasters and where relevant heads of academy trusts.
- The GLA will have conducted early engagement with the schools to introduce the project via a letter from the Mayor or Deputy Mayor. However, the Supplier is expected to follow this up and gain full commitment from the schools and maintain a good working relationship and contact with schools throughout the duration of the project.
- Carry out initial site visits to each school which will receive filters to plan feasible locations for the filters. Provide information on the filters including how to optimise their use (including how to use different settings or turning off the filters to limit noise during quiet periods) to key points of contact in the schools and answer queries and concerns as they arise.
- Provide and install “cost-effective” indoor air quality filters which can be demonstrated to reduce concentrations of $PM_{2.5}$ in classrooms and which are practical for the school environment. Full details of the efficacy and practicality of your proposed filters should be provided in your tender. Further information on the types of filters the GLA would expect and other key factors are set out in Appendix 2. For reference, we estimate that this will be circa 3,000 classrooms. The actual number of classrooms and filters will depend on the final list of confirmed schools.
- If surplus filters are available beyond 200 schools, additional schools should be engaged and provided with filters. The selection of these should be agreed with the GLA. Additional filters may be prioritised in classrooms on ground level and adjacent to main roads where levels of $PM_{2.5}$ are likely to be higher.
- Work with established school contacts to install the filters into all classrooms (or as many as feasible) across the selected schools in appropriate and effective locations (e.g. allowing space for good airflow, locating filters away from windows etc.).
- Create and provide an accessible guidance document upon competition of the installation (for example, a poster which could be stuck to the units) for

all schools with filters setting out protocols for how to optimise their use including advice on how often to ventilate the classroom and information on how to turn the filters off or onto a low setting if required during quiet study or test periods. This guidance should evidence based and written proportionally with consideration of other factors including the need for ventilation to tackle overheating, for example.

- Take full legal and effectively insured responsibility for managing risks around the installation of the filters including minimising fire and injury risks. Maintain and update on at least a monthly basis a risk registers and report key and emerging risks to the GLA. Mitigations are expected to include utilising timer switches to automatically turn the units off out of school hours and ensuring that units are PAT tested where required.
- Transfer ownership of the filters to the schools through a legal agreement which commits the schools to keeping the filters indefinitely. This will be done in collaboration with GLA officers.

**Deliverable 2:** Maintain the filters as required and ensure that they operate effectively for a minimum of two years, and that they would have the capacity to be operated and maintained for an additional three years, including filter replacements as required.

- *Please note:* Once the filters are rolled out to the first 20 schools, monitoring information should be provided within 1 month. If the filters are under performing by more than 5% compared with the stated performance in the tender, the Supplier will need to provide a remedy (which may involve providing an alternative filter which can achieve the required level of performance).
- Provide filter replacements (ie. the filters used in the purifier units) as required (minimum of once every 12 months from the installation of each filter for the duration of the project (ie. two filter replacements per filter in the first two years)). Schools in more polluted areas may need filter replacements more regularly than others and should be replaced as regularly as required to ensure effective performance. The frequency of filter replacements should be informed by professional opinion and through discussions with GLA officers.
- Liaise directly with the schools to arrange filter replacements and report to the GLA regularly on how many schools have had filters replaced and when.
- At least once every 6 months conduct site visits to all schools to ensure that the filters are being used effectively e.g., not being turned off or moved to a less effective part of the classroom. Use monitors from deliverable 3 to help ensure that filters are operating as intended and adjust filters or engage school contacts where appropriate to resolve issues. *Please note* that if you have an alternative solution to visiting schools every 6 months to help ensure optimal filter performance (such as all filters being monitored and this being tracked and only schools with underperforming monitors being visited, or an audit of a smaller number of schools) we would be open to this as long as it was robust, so please detail your suggested approach in your tender.
- Replace damaged or broken air filter units if required. Ensure waste is minimised by reusing or recycling parts of the filters where possible.

**Deliverable 3:** Provide, install, and maintain at least two indoor air quality monitors per school (total of at least 400) to monitor the impact of the filters on indoor air quality. Report on this data through annual reports and a final report including evaluation of how the filters have improved indoor air quality. Monitor, evaluate and report other data back to the GLA, including other pollutants, qualitative feedback, attendance, and other outcomes as required. Consideration should also be given to how this data and other available data (including data from sensors outside of schools if available) would be fed back to schools to ensure education and engagement.

- Install at least two indoor air quality monitors (minimum of 400) (monitoring $PM_{2.5}$ and $CO_2$ as a minimum) to schools during the installation of the air filters. These monitors should be demonstrated as providing robust and accurate data at least hourly. The monitors should be installed into classrooms at least two weeks before the filters (to gather control data, pre-intervention) and should then be in place throughout the duration that the filters are operational. They should be located in similar locations in each classroom in terms of distance to the filters, windows and doors as far as practicable.
- The monitors should provide robust data in an indoor setting. A specification sheet for the proposed monitors should be provided as part of the submission which should include quantification of accuracy for each of the pollutants monitored and any relevant accreditations.
- Ensure that these monitors are maintained as required and provide monitoring data to the GLA on request or share the monitoring portal for all monitors directly with the GLA. Data should also be made available to the school and presented in a user-friendly format so that is can be easily used in engagement.
- The provider should also monitor the outputs set out in the monitoring and evaluation plan (Appendix 1) as a minimum. The provider will be expected to provide a monitoring and evaluation plan setting out how these outputs will be monitored and evaluated. The details of how each of these outcomes will be monitored and evaluated may need to be agreed following contract award.
- Provide one annual report 12 months on from project launch setting out key outcomes including annual average, monthly and daily average $PM_{2.5}$ concentrations for each school and impacts comparing the period following filters being installed to before they were installed. This should include other data including quantitative and qualitative feedback from the schools including on noise levels. This report should evaluate this data against success criteria which are to be agreed with the GLA. Provide drafts for input to the GLA ahead of final reports being created.
- Provide a final report by the end of the initial project period ie. 24 months from project launch summarising the impact of the filters on indoor air quality in terms of $PM_{2.5}$ in addition to presenting and analysing all the data set out in the confirmed monitoring and evaluation plan as a minimum. These should be evaluated against success criteria which are to be agreed with the GLA.
- The final report should include an analysis of the likely yearly impact of rolling out filters to all public primary schools in London in terms of reduced exposure

to $PM_{2.5}$ concentrations and related likely health outcomes. Ideally, this should also include a reference to the return on investment of the filters in terms of health and academic outcomes including attendance and performance. Ideally, this should also include analysis of the relationship between outdoor and indoor air quality by using publicly accessible air quality data, such as that provided by the Breathe London nodes.

- Work with GLA officers to share results of the monitoring and evaluation to relevant stakeholders to highlight the benefits of the filters and encourage schools to maintain them following the funded period.
- The Supplier is expected to take responsibility for ensuring compliance with data protection regulations throughout the project.
- The Supplier is expected to decommission monitors at the end of the project duration at the GLA's request.

**Deliverable 4**: Plan and deliver an awareness-raising element to the project with the 200 schools (or as many as possible) to improve awareness around the air quality challenge, both in an indoors and outdoors setting, and how the filters aim to tackle it.

- As a minimum this will involve one assembly to each school at least once a year. Where existing engagement with schools on air quality has been recently done at a school, engagement may not be necessary and could instead link with existing projects.
- Ideally deliver lessons and/or classroom activities with the schools. If possible, this would be a minimum of one lesson per school in the first year. It should where possible align with curriculums where relevant e.g. scientific methods. Lessons could incorporate indoor and outdoor air quality data to highlight what the levels mean and why they differ.
- To minimise duplicating work, the engagement should use existing resources where possible and should link in with existing similar engagement projects including those run by boroughs or the GLA including School Super Zones or networks such as the School Climate Action Multiborough network, in addition to engagement which may be undertaken through the GLA's Breathe London project. The provider is expected to identify these existing links and identify ways to build on them. This may involve work with borough officers to supplement their existing engagement campaigns, for example.
- The provider should use free existing resources as far as possible, for example those provided by SAHME (SAMHE resources) and the Indoor Air Quality Working Party (Resources for school children – Indoor Air Quality Working Party (theinsidestory.health)).
- Engagement should address the air quality challenge generally and how it relates to schools and pupils, and specifically indoor air quality and how the filters factor into this. Engagement should encourage wider positive behaviour change including ventilation where effective and not detrimental to indoor air quality (i.e. not opening windows next to busy and polluted roads). Engagement could also feed into wider behaviour change around poor air quality including students to use cleaner walking routes to and from school.

- The provider is expected to ensure that communications given are proportionate and evidence based. Communications materials will be reviewed and approved by the GLA to ensure it aligns with our approach. The Supplier should consider how engagement will be delivered to avoid “climate/ eco-anxiety”.
- While most schools being engaged with will be primary, other types of schools will be involved and as such the content of engagement will need to be tailored to each audience.
- Support the GLA to provide external communications including press releases regarding the project as required.

**Deliverable 5:** Provide an ongoing support service for schools to answer queries around the filters and provide support as needed. As a minimum, provide a generic mailbox and provide site visits to schools.

- Set up and maintain a generic email where schools can send queries or raise issues regarding the project including advice on how to get the most out of their filters. The provider should respond to these requests and attend site visits where required.
- Report to the GLA regularly on the support given and any persistent issues and risks with the project.

**Deliverable 6**: Work closely with GLA officers to ensure the project is delivered effectively. Attend regular project meetings and provide responses to queries and requests in a timely manner.

- Report to the GLA at least monthly on deliverables and financial performance and how these compare with established time-based deliverables and budgets.
- Attend monthly project meetings providing an update to the project including filter installations, support provided, monitoring results, engagement provided and evaluation and reporting. Key risks to delivery and suggested changes should be highlighted at this meeting for review and approval on changes to approach.

# 5. SERVICE LEVEL AGREEMENTS (SLAS)/KEY PERFORMANCE INDICATORS (KPIS)

- Provide live air quality monitoring data for all monitors to the GLA and to each school one month after filters are installed.
- Respond to enquiries from the GLA SPC withing 5 working days.
- Respond to enquiries from schools and borough officers to the generic inbox within 5 working days.
- Respond to faults in filter equipment withing 10 working days including providing replacements where needed.
- Resolve under-performing equipment within 30 working days by engaging with school contacts or carrying out site visits where needed.
- Install air filters by the end of March 2025 (subject to negotiation if all schools cannot be completed by this date).

# 6. PROJECT PLAN/TIMESCALES

This project will be overseen by the GLA's Air Quality Team.

The single point of contact will report to and work closely with a nominated representative in the GLA Air Quality Team to ensure the effective delivery of the project.

The dates set out below are subject to change if the project is extended, or if the contract is not renewed at the end of each calendar year.

| Task number | Task/Output | Date |
|---|---|---|
| 1 | Inception meeting | November/ December 2024 |
| 2 | (**Deliverable 1**) First installation of filters | December 2024/ January 2025 |
| 3 | (**Deliverable 1**) One month on assessment of efficacy of filters in first 10-20 schools | Jan/Feb 2025 |
| 4 | (**Deliverable 1**) Installation of filters across all selected and engaged schools including confirming involvement of schools through site visits etc. | By end March 2025 (subject to negotiation if all schools cannot be completed by this date) |
| 5 | (**Deliverable 2**) Maintain filters as required including providing filter replacements. | December 2024/ January 2025 – December 2026/ January 2027 |
| 6 | (**Deliverable 3**) Install at least two indoor air quality monitors per engaged school.<br>Maintain the monitors and make data available to schools for the duration of the project.<br>Monitor and evaluate other outcomes including as a minimum outcomes listed in the provided monitoring and evaluation plan. | Q4 2024/25<br>Q4 2024/25 – January 2027 |
| 7 | **(Deliverable 3)** Provision of end of year report. | January/ February 2026 |

| | | |
|---|---|---|
| | End of project report. | January/ February 2027 |
| 8 | (**Deliverable 4**) Plan and deliver awareness raising including assemblies to all schools and lessons. | Q4 2024/25 – November/ December 2026. |
| 9 | (**Deliverable 5**) Provide ongoing support service for schools. | Q4 2024/25 – January 2027. |
| 10 | (**Deliverable 6**) Closely work with GLA officers to ensure the project is delivered effectively. | November/ December 2024 – January 2027. |

# 7. RESPONSES

Responses to this specification should detail but not be limited to the following:

Price

- Total fixed cost for all the contract deliverables (excluding VAT) including a breakdown of the costs by deliverable, financial year and quarter.
- Breakdown of all staff and other costs associated with the contract.
- A payment profile to be provided. This will be subject to GLA's approval and shall have the right to adjust if necessary.
- Cost estimates for extensions to the project after the initial two-year period, these being continued all associated deliverables (Other than deliverable 1 as we don't envisage additional filters being required. This will include an additional third year monitoring and evaluation report), an extension by three years, (This will include an additional third year monitoring and evaluation report), to a total of 400 schools (including the original number committed ie. at least 200).

Approach

- An indication of whether the Supplier will be working independently on the project or by adopting a partnership/consortium approach (in which case details of the partnership/consortium composition should be included including which supplier will be providing which elements of the project and how the lead supplier will coordinate sub-contractors).
- Appendix 3 sets out the GLA's preferred framework of suppliers. Bidders can propose alternative framework.
- Details of any methodology including for evaluating the impacts of filters. Include any proposed and details to the draft monitoring and evaluation. Include details of what the year on and end of year reports will include.
- Detailed description of how the specification will be delivered, covering all the points outlined above and any additional ideas or proposals you wish to include.
- Proposed detailed programme plan of the work including a budget proposal and risk assessment. The programme plan should be broken down by each deliverable and which supplier is responsible for delivering which element (where there are multiple suppliers).
- Examples of previous works that can show a track record of the requirements listed above.

Personnel

- Qualifications and experience of the proposed personnel in the form of individual CVs. The amount of time each member will spend on the Programme must also be included.
- Relevant experience of the Supplier's programme team, relating to contracts of a similar nature where applicable.
- The Supplier's Safeguarding Policy.

- Relevant security clearance for personnel working in schools (enhanced DBS checks).

# 8. APPENDICES

Appendix 1. Draft monitoring and evaluation plan (attached separately)

## Appendix 2. Air filtration units minimum requirements and other considerations

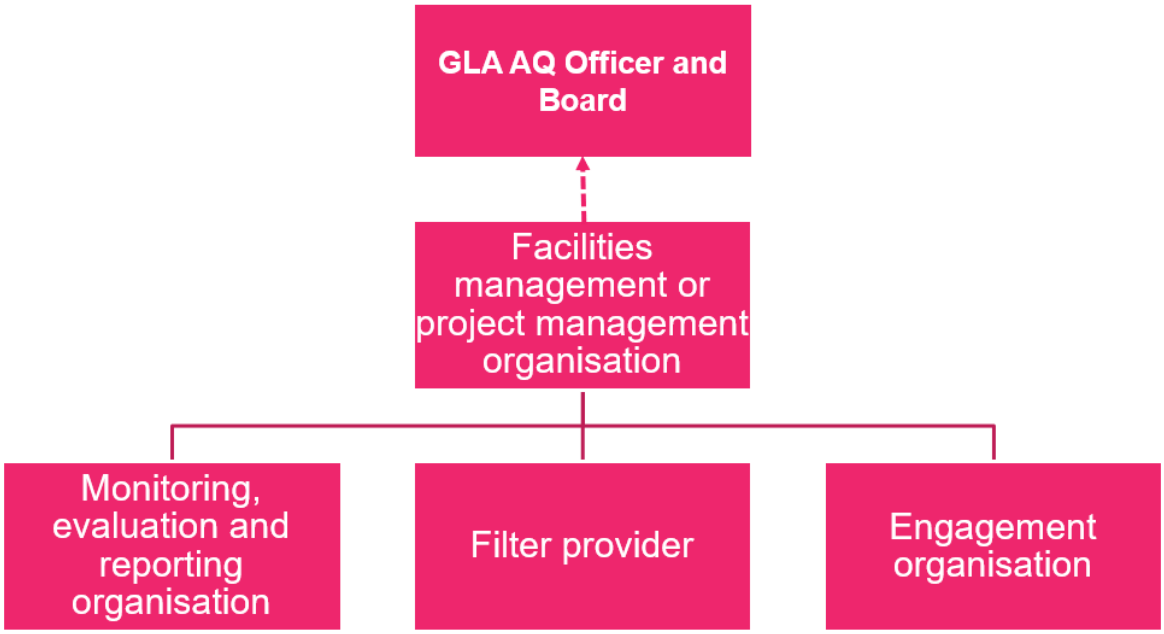
- The supplier is expected to deliver cost-effective indoor air quality filter units which are practical and unintrusive and have a low risk of unintended consequences in a school environment.
- The units are expected to include as a minimum:
    - A HEPA filter of at least H13 standard.
    - A pre-filter that will collect dust and other matter larger than 5um.
    - Be effective for spaces of at least 160$m^3$ and be capable of scrubbing at a rate of at least around 700$m^3$/hr in the room.
    - Be mains operated.
    - Have at least a “low” and “medium” setting or equivalent.
    - Not exceed 45 dB measures from 1m away on a “medium” setting. The “low” setting is expected to not exceed 25 dB measured from 1m away. Robust and where possible independent evidence of noise levels is required.
    - Tamper proof/ child lock setting.
    - Be of a reasonable weight and size, maximum floor space to be covered of no more than 0.15 $m^2$, and no more than 800mm in height.
    - Be mains electricity powered.
    - The units should be turned off outside of school hours, either by using a timer switch, or by using built in timers to reduce energy use and mitigate fire risk. The units may need to turn on up to two hours before school hours start as the GLA is aware it can take this time to achieve maximum concentration reductions.
- The GLA would expect the filters to be able to reduce concentrations of $PM_{2.5}$ by a minimum of 20% (ideally more where possible) during school hours compared to pre-intervention data for each school. If this level is not achieved across multiple schools, the GLA may ask that an alternative solution is provided at not additional cost which does achieve this improvement.
- The units must satisfy all relevant safety testing requirements and comply with all relevant UK component and product safety requirements, including but not limited to:
    - Filters tested to: ISO 16890 -1:2016 / EN1822-1:2019.
    - Filters are PAT tested.
    - The units must not create or emit any ozone or other harmful products when in operation.
    - The units must not have any ionisation features.
    - Minimum 2-year warranty.
    - With normal usage - filter should not need replacing more than once every 12 months, however this may need to be more frequent for more polluted classrooms.

- The below list sets out other considerations for the filters selected.
    - Wall-mounted filters may be more practical for a constrained classroom environment.

- Two smaller filters per classroom will be considered where they can be demonstrated as being as or more effective and practical than a single larger filter.
- A mix of different types and sizes of filters may be used to account for different classroom environments and constraints. However, as bidders may not be aware of how many of different types of filters will be needed until the project is underway, bids are expected to cost for one type of filter – ideally a filter with high Clean Air Delivery Rates to provide conservative estimated. Discussions during project delivery will inform whether other smaller filters are required and can be used.
- Units which can be demonstrated to have lower noise levels and will be prioritised.
- Units which have recycled or reused components and those which can have elements which are recyclable or reusable more easily will be prioritised, as well as those which are manufactured more locally.
- Filters should ideally be located where they will be most effective in the classrooms e.g. with enough room between the inlet and outlets and walls and furniture. However, considering the constrained nature of classrooms, the GLA recognises that optimal location is rarely possible and instead would expect the best practicable location to be chosen.
- Suppliers may wish to specify air purifier units which include additional features such as activated carbon to trap gaseous pollutants. However, the GLA are aware features such as these may be more expensive to purchase and maintain. Suppliers are encouraged to consider the key objective of reducing levels of $PM_{2.5}$ and whether units with these additional features would present good value for money in this context.

Appendix 3. Suggested supplier framework

- The GLA consider the below supplier framework to likely be the most effective to achieve the aims of the project, however alternatives can be proposed for consideration.




- Indicative roles and responsibilities
    - Facilities management or project management organisation
        - Direct reporting to the GLA AQ officer and wider project board.
        - Engagement with schools and maintaining relationship.
        - Delivery of the units to the schools including site visits, actual installations, maintenance visits etc.
        - Installation and maintenance of indoor air quality monitors.
        - Work with the GLA to manage communications around the project.
        - Management and coordination of other providers (below).
        - Responsibility for all risk and liability insurance and management

        - Overall project management of the project including providing and maintaining programme plan and risk register, monitoring financial performance.
    - Monitoring, evaluation and reporting organisation.
        - Providing and maintaining an agreed monitoring and evaluation plan.
        - Provision of indoor air quality monitors.
        - Designing and delivering surveys where needed.
        - Provision of year end and end of year project in line with agreed monitoring and evaluation plan.
        - Ensuring compliance with data sharing and data protection regulations.
    - Filter provider.
        - Provision of required number indoor air quality filter units to the facilities management or project management organisation.
    - Engagement organisation
        - Delivery of engagement element of the project including assemblies and lessons.
        - Working with London boroughs and other organisations to link engagement in with existing work and to avoid duplication of work.
        - Engagement should link closely with the monitoring element by using indoor and, where available, outdoor air quality monitoring.
- The following alternative supplier frameworks may also be considered.
    - Combined engagement and monitoring, evaluation and reporting provider.
    - Lead monitoring, evaluation and reporting provider also fulfilling project management functions. Facilities management company installing filters into schools.
    - Single provider providing all elements.