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### **Great Russell Street - AAC Eurovent Carbon Filter Maintenance Plan (10-May-23)**

- The AAC Nitrosorb Carbon Filters provided for the Sub Basement Level 4 Supply AHU have a media type specially selected for treating atmospheric pollution including NO<sub>2</sub>, NO<sub>x</sub>, O<sub>3</sub>, Diesel Fumes and other Organic Compounds.
- The Filter arrangement consists of 120 Plastic Refillable AAC Single A size filter cells. Each Filter contains approximately 3.8Kg of Pelletised specially Chemically impregnated Activated Carbon Media. This equates to approximately 456Kg of AAC Nitrosorb Activated Carbon Media. This media has been independently tested to provide a high performance/ affinity to NO<sub>2</sub> and NO<sub>x</sub> removal.
- The Filters are installed in a VEE configuration located in specially manufactured aluminium slides with brushpile seals to ensure that any air by-pass is minimised as far as possible.
- The Filter system provided by AAC Eurovent Ltd is well proven and has been utilised in many similar applications for providing the capability of reducing NO<sub>2</sub> and NO<sub>x</sub> to acceptable levels beneath the CAFE Directive of 40ug/m<sup>3</sup>.
- This system if well maintained will ensure that the incoming airstream contaminant levels are well beneath the maximum permitted concentrations.
- Inspection Frequencies
  - It is therefore recommended that the G4 Pleated Panel Pre filters (and Post Filters) are inspected on a 3 monthly basis and replaced as necessary according to their physical condition.
  - The Seals on the AHU Door should be inspected on every AHU Door opening and repaired as necessary.
  - It is also recommended the Activated Carbon Filters are inspected at the same time as the Pre Filters.

- A Sample filter shall be removed and a visual inspection of the Carbon Media inside the sample filter cell for:
  - A High Level of Carbon Media Content
  - A Consistent Pelletised Material free from any white oxidation deposits or any evidence of water.
- The Visual inspection of the AAC Colourcell will be the first indication by colour change that the Carbon Media is in need of replacement. Details on the AAC Nitrosorb Colourcell is attached. This inspection can be carried out every 3 months at the time of Pre & Post Filter inspections.
- We would recommend that a media sample is taken and an RCT – (Residual Capacity Test) is performed every 12 Months to give a definitive result by taking a media sample from one of the Carbon Filter Cells in the Array.
- The result of the RCT test will inform the Maintenance team of the need or otherwise to replace the AAC Nitrosorb Activated Carbon Media. AAC Eurovent Ltd recommend that the AAC Nitrosorb Activated Carbon media is replaced in any event every 3 years.
- It is essential that any Carbon Media replacement utilises the original grade of AAC Nitrosorb Activated Carbon Media to preserve the performance of the Filtration System.  
(Not all Activated Media types have this ability to remove these contaminants as AAC Nitrosorb Activated Carbon Media).
- In this way the performance of the Filtration system will always be performing at its optimum and provided the necessary protection to building occupants from the effects of excessive atmospheric pollution internally.
- AAC Eurovent Ltd offers all its Clients a Servicing Capability for each system provided.  
Full information available upon request.