

**Outgoing  
Email**

from

CN=Duncan  
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on

07/11/2013 15:40

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To: Paul.Hanson@rbkc.gov.uk

cc: "M.Smith@maxfordham.com"; Terry.Ashton@Exova.com; Grenfell  
<Grenfell@studioe.co.uk>; "Bruce Sounes" <bruce@studioe.co.uk>

Subject: Grenfell Tower - Smoke exhaust LFB submission.

Associated Documents

created by: Michael McMillan on 15-Sep-17

Paul,

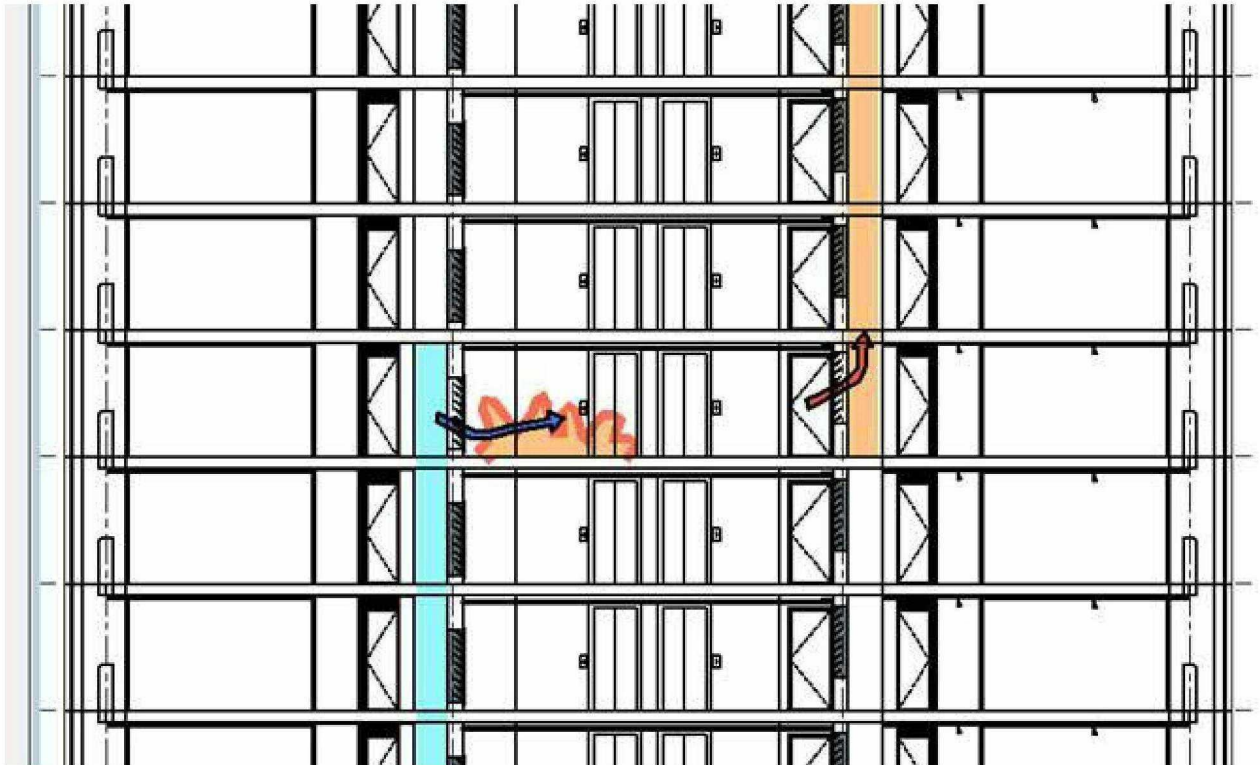
Following on from your conversation with Bruce Sounes, I will try and clarify some of the points you raised regarding our draft report. My comments are in **GREEN**.

1. "...is designed .. as a natural ventilation system..." (line 2) is followed by "a mechanical supply and extract system which does not rely on natural ventilation" (Smoke Control, second para). His initial response is that this reads like we are omitting a compliant natural vent shaft. **We could just leave the 'compliant' system as it is at present, but we (and Exova) think it would be better to provide a more predictable system with mechanical supply and extract as the default mode, all as described in the 'Proposed System' part of our report.**

2. Some diagrams would be useful. **I have attached our schematic drawing**



U(14)01\_200.pdf **and Studio E have provided the visual representation below.**



3. Principle of dual use of duct for vent and smoke okay – but not clear from document and would like some detail as to how this will be achieved.

The smoke controls and the temperature controls would all be part of the same control system controlling the dampers and the supply and extract fans.

Under normal conditions, all the dampers would be open and the system would operate as a natural ventilation system. Temperature sensors would be located on 'typical' (say 5 No.) lobbies. If the temperature in any of these areas exceeded a pre-set comfort level, then the supply and extract fans would operate to try to reduce the temperature.

In the event of smoke being detected within any lift lobby served by the smoke control system, the fresh air and smoke dampers serving that particular lobby would remain open and the supply and extract fans would operate. The fresh air and smoke dampers on all other levels would be closed. The system would be set up such that it was 'fail-safe' with priority always being given to the fire safety operation.

If this is still unclear, I would be happy to discuss on the phone.

4. Describe sequencing of dampers shutting on alarm. I think our answer to point 3 answers this, but if this is still unclear, I would be happy to discuss on the phone.

5. Query rates of flow –  $\text{m}^3/\text{s}$  & air changes. Having discussed this with Exova, we have been unable to find a ventilation Standard which could be directly applied to the existing system or building configuration. We suggested 15 air-changes per hour as a reasonable criteria based on Building Regs. Part B5 - smoke ventilation requirements for basements being 10 air-changes per hour, albeit with sprinklers installed. As the system would only be venting one level, the flow rate would be relatively small (of the order of  $0.4 \text{ m}^3/\text{s}$ ). It would be possible to increase the ventilation rate if that was felt to be beneficial.

6. Query how you balance the system with powered supply as opposed to powered extract only. Not sure what the query is as the system would always operate with both the supply and extract fans running. The fan duties would be such that we can ensure a negative or positive pressure set-up.

I would be happy to discuss any of the above or any other queries and amend our proposals if necessary.

Duncan.

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