

**To:** [REDACTED]@jswright.co.uk [REDACTED]@jswright.co.uk]  
**From:** David Harrison  
**Sent:** Mon 01/02/2016 5:27:52 PM  
**Subject:** Fwd: rams  
[75019AG Grenfell tower rams.doc](#)

Hi Alan

Equipment delivered today for installation by Wednesday before commissioning.  
RAMS for commissioning as requested.

Best regards  
David

Sent from Samsung Mobile on O2

----- Original message -----

**From:** Granville Partlow <[REDACTED]@wittandson.co.uk>  
**Date:** 01/02/2016 14:05 (GMT+00:00)  
**To:** David Harrison <[REDACTED]@psbuk.com>  
**Subject:** rams

Best Regards

*Granville Partlow*  
*Commissioning Manager*

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# **PSB Commissioning**

## **Method Statement & Risk Assessment**

### **75019AG Grenfell Tower**

**February 2016**

**Rev 00**

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## **1.0 Scope of Works.**

### **Above Ground – Smoke Control System**

- 1.1 Carry out the commissioning of the PSB control panel.
- 1.2 Carry out the commissioning of the main extract fans.
- 1.3 Carry out the commissioning of the lobby dampers and AOV's
- 1.4 Carry out the commissioning of the outstations and keys switches.
- 1.4 Carry out the commissioning of the Stair core systems.
- 1.5 Carry out the commissioning of the Overall System in line with latest Cause & Effect.
- 1.6 Carry out client witness tests demonstrating 3<sup>rd</sup> party interfaces.
- 1.7 Hand over operational system.

## **2.0 Hazard Identification.**

SEE ATTACHED

## **3.0 Risk Assessment.**

SEE ATTACHED

## **4.0 System description**

### **Mechanically Assisted Natural Ventilation (MANV) System**

The system is designed for applications where there are space limitations around the application of a natural smoke shaft. Activation of the system is via smoke detectors within the communal areas providing a signal via the fire alarm system.

When a lobby smoke detector senses smoke, the vent within that area only opens, the head of the stairwell is permanently open and the primary fan will start.

Fan failure is detected by current sensing device monitoring the fans current consumption, if this drops below a certain level, the secondary fan is initiated (indicated on mimic panel).

### **System Operation**

The system has two operational states:-

Fire-fighting with door to stair fully opens

Means of Escape - stairwell door to lobby closed, smoke still in lobby

It would be possible (if left un-checked) that the pressure differential within the lobby could exceed 50Pa between the lobby and the stairwell, the system therefore (once activated) is automatically controlled via a pressure sensor.

### **“Means Of Escape” mode**

The main extract fan will start and begin to extract at a reduced load (established at time of commissioning) to ensure that as people leave the lobby into the stairwell the pressure differential between the lobby and stairwell doesn't exceed 50Pa.

As people leave the lobby the negative pressure equalizes with the stairwell and as air is drawn from the stairwell (via the already open stairwell AOV). The fan will vary in speed to maintain a pressure differential of approx 45Pa between the stairwell and the lobby.

When the stairwell door is closed (last person has escaped), there will be no makeup air present and as the differential pressure in the lobby increases the fan will slow down ensuring that the pressure differential between the stairwell and the lobby doesn't exceed 50Pa.

### **“Fire-fighting” mode**

In fire-fighting mode, the door from the stairwell into the lobby is fully open, the extract fan will draw smoke from the lobby at maximum rate. However if the stairwell door is closed and there is an increase in the differential between the stairwell and the lobby the fan speed will reduce to ensure that there is no more than a 50Pa differential between these two areas.

The fire officer on the fire floor also has the option, via the local “Fireman’s Override” switch the system off. If the two position switch “AUTO/ON” is returned to the “Auto” position and the smoke detector in the area hasn't been reset, the system will start up again.

### **Switching between modes**

The system is designed to be automatic and as such the system can be overridden only at the mimic panel. In this instance the system will replicate the fire-fighting mode without the smoke detector functioning, this will also open the stairwell AOV at the same time. If all doors within the lobby are closed, the systems pressure sensor will prevent excessive depressurisation.

On receipt of fire signal from lobby smoke detectors the lobby damper on that floor level will open, the head of the smoke shafts AOV vent opens and the primary fan will start. Indication of floor level fire is location will be displayed on HMI panel located on ground floor.

Activating the override switch on the HMI panel on the ground floor will give the fire officer the option via the HMI Panel touch screen to ventilate each floor level individually opening lobby vents. Smoke dispersal system can be reset once fire signal is reset.

### **Commissioning Test**

The fire detection system will be automatically trigger and provide a signal to the PSB Panel. This signal will be taken by the PLC in the PSB Panel, activate the extract fans to ramp up to full speed (fire mode) and open the relevant damper on the fire floor.

## 5.0 Briefing Arrangements.

- 5.1 All Staff on site will sign on to and off site on a daily basis.
- 5.2 A copy of this method statement will be on site, along with a set of the agreed working drawings for access by all operatives.
- 5.3 All accidents will be reported to the site supervisor and logged in the site Accident Book in accordance with the reporting of injuries, diseases and dangerous occurrence regulations 1985 and site rulings. All accidents will be investigated into and actions taken to prevent further occurrences. A formal report will be issued to the site Supervisor.
- 5.4 All operatives will be made fully aware of all site Health and Safety requirements, statutory requirements under The Health and Safety at Work Act 1974, Section 2 Duties to Employees, Section 3 Duties to Others, and Employee Responsibilities under Sections 7& 8, Company operating procedures and site rules relating but not limited to:
  - a) Site access and egress
  - b) First aid and welfare
  - c) Hazardous materials and substances
  - d) Established risks and hazards
  - e) Protective equipment
  - f) Safe working practice including working at heights
  - g) Fire prevention

## 6.0 *Permits to Work.*

Permits to work will be obtained from site as required under the contract prior to commencement on site by any operatives.

## 7.0 Plant and Equipment.

- 7.1 Any plant or machinery brought on to site will comply with the requirements of "The Provision and use of Work Equipment Regulations 1992", other standard codes of practice and relevant site rulings.
- 7.2 All electrical apparatus will be maintained in good working order in accordance with The Electricity at Work Regulations 1989", HSE guidance notes, relevant British Standards, safe working practices and site rules, and will be suitable for use with 110 volt power supply.
- 7.3 There is no requirement for the use of vehicles to carry out any of the procedures for pre-commissioning or commissioning. Therefore 'Vehicle All-round Visibility Assessment' is *Not Applicable*.
- 7.4 There is no requirement for Materials to carry out any of the procedures for pre-commissioning or commissioning other than

cold smoke generator which is covered in the COSHH assessment. Therefore 'Materials Assessment' is *Not Applicable*.

## 8.0 Supervision.

- 8.1 The below personnel will be responsible for site supervision whilst testing.

**Granville Partlow – PSB Commission Engineer**  
**07771 615 016**

They will be no persons under the age of 18 carrying out works on this system.

## 9.0 PPE.

- 9.1 The listed personal protection equipment laid out in the respective COSHH and risk assessments will be worn at all times: - Safety Helmets; foot protection; High Visibility Clothing Hand, ear and eye protection must be carried and should be worn when required.

## 10.0 Public Interface Arrangements.

- 10.1 Areas will have respective barriers installed prior to works being carried out by client.
- 10.2 Customer to be made fully aware of working areas and full agreement reached as to areas requiring barriers prior to carrying out the works. Thus minimising disruption during the commissioning process.

## 11.0 Emergency Procedures.

- 11.1 Site emergency procedures to be adhered to at all times.
- 11.2 Site supervisors will be responsible for ensuring the safety of their personnel in the event of an emergency.

## 12.0 Working Hours.

- 12.1 Works to be carried out between 8.30am and 4.30pm Monday to Friday.



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## RISK ASSESSMENT

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Procedure	Associated Risk	Level of Risk	Precautions	Level of Risk with Precautions
Working from Height	Falling	H	Ladders will only be used as a last resort. If used they will be at the correct angle and securely tethered or footed and usage time will be at a minimum. Equipment used for working at greater heights and should be regularly checked for safety.	L
Working on live systems	Electric Shock	H	Control Panel (CP) may have to be accessed for testing purposes whilst it is live and operating equipment. All terminals inside the CP are adequately shrouded. Access to the CP will only be by fully trained personnel and personnel of the CP manufacturer	L
Work in Public areas	Sound of Extract Fans may disturb the public	M	Areas around the outside of the building are going to be subject to increased noise levels and as such communications and hearing may be reduced. Notification to local residents and businesses may be appropriate that these tests are taking place.	L
Communication	Sound of Extract Fans may impair communications between site personnel	H	Areas on roof level are going to be subject to high noise levels when operating under fire conditions. Notification to site personnel that these tests are taking place.	L
Debris and Building Dust	Damage to equipment	H	Building to be free of all debris and dust, thus being unable to be drawn through the fans and smoke detectors.	L

Level of Risk Evaluation:

<b>L – Low</b>	Work Activity resulting in minor injury but not lost time or some material damage.
<b>M – Medium</b>	Work Activity resulting in lost time or injury or significant material or environmental damage.
<b>H – High</b>	Work activity which has the potential to cause fatal/major injury or health damage.

### **13.0 Inspection and Test Plan**

**Before PSB Can Commission the system all the points below must be confirmed as 100% complete**

#### **Installation**

- Ensure all the Ventilation System equipment been correctly installed and connected.
- Visually check that there is no damage to equipment.
- Have all control panels been correctly installed and connected?
- Are all Exhaust Axial fans correctly installed and connected?
- Are all Pressure switches correctly installed and connected?
- Are all Dampers correctly installed and connected?
- Has all equipment been fitted as per '*PSB Equipment Co-ordination Layout*' drawings
- Ensure all fire signal for relevant floor are available to be integrated onto smoke ventilation system.
- Has all required sealing been carried out?
- Has link to the other staircore system been installed?

#### **Main Control Panel**

- Visually check that all components are not damaged and fitted correctly
- Is system Power Available 100%?
- All fuses and other protective devices have been correctly sized.
- All adjustable setting devices (e.g. overloads) have been set correctly.
- Has Fire Detection been interfaced to Main Panel and Tested?
- Have all the fans been run to ensure they rotate in the correct direction?
- Do the selected fans run and at the correct speed when called to run in the correct sequence as per '*Cause and Effect*' chart?
- Does the selected associated equipment if fitted (e.g. dampers) operate correctly when called to operate in the correct sequence as per '*Cause and Effect*' chart?

#### **PSB Requirements: To be confirmed before Commissioning/Handover/Witness Tests**

- **ALL lobbies to be completed including doors, flooring and ceilings. Clear of all debris and clean of building dust, which would be drawn through the fans and could result in their subsequent damage.**
- **ALL Doors to be installed complete with all door furniture, Draft proofing etc.**

- **ALL Shafts smoke sealed & Plant Rooms closed off.**

**14.0 Revision Control**

<b><i>REVISION No.</i></b>	<b><i>ISSUE DATE</i></b>	<b><i>MODIFICATION</i></b>	<b><i>AUTHOR</i></b>
00	February 2016	Original issue	G Partlow - PSB

**15.0 Attached Documents**

<b><i>ISSUE No.</i></b>	<b><i>AUTHOR</i></b>	<b><i>NATURE OF DOCUMENT</i></b>	<b><i>TYPE OF DOCUMENT</i></b>