

THE GRENFELL TOWER INQUIRY

EXHIBIT DPB/16

This is the Exhibit marked “DPB/16”
referred to in the witness statement
of David Paul Bradbury

David Bradbury

From: David Bradbury
Sent: 23 February 2015 17:15
To: Zak Maynard
Cc: Terence McLaughlin; Simon Lawrence; Adam Marriott; David Peacock
Subject: RE: Grenfell Tower - AOV

Zak,

Apologies in the delay in getting you this information, the following is the breakdown of the £112k for the AOV re-design:

Main elements for the additional £112k:

Design change:

- Fan increase from 0.42m³/s to 5m³/s.
- All smoke fans will now be smoke extract, duty standby.
- As the smoke fans are noisier (Due to tip plate clearance to allow propeller to expand during smoke extract), the environmental fans will need to be separate.
- Pressure switches on every floor.
- Addition controls and commissioning (Commissioning will require all pressure switches to be tested, air flow across every door, flow rate checks on both smoke and environment fan systems).
- Additional wiring for pressure switches
- Pull push system changed to full extract incorporating the general ventilation
- Override switch at every floor due to London fire brigade requirement.

The following is the full breakdown of the AOV works:

- **Phase 1 Supply, Delivery, installation and Commissioning Of the Natural Smoke ventilation System Serving The lobbies**

A. 1 Supply and installation of PSB Master Smoke Control system panel located in the service riser within the lobby on the Walkway level. This panel is to be a 230vAC in and 24vDC output panel and to be complete with a battery backup pack.

B. 1 Supply and install PSB aluminium smoke vertically mounted louvred smoke ventilator with a measured free area of 1.0m². (inlet shaft)

C. 1 PSB Mimic override panel in ground floor complete with HMI Screen and mounted in separate protective steel enclosure.

D. 21 Supply and install PSB two zone interface modules, mounted on every floor level (these are connected to local override switches, smoke detector, and provide power to the motorised damper/AOV ventilators/stairwell ventilators etc.). Power and control cabling will be by PSB from master smoke control panel. The control modules will be located in local the electrical service riser within the ventilated lobbies.

E. 3 Supply and install PSB booster battery packs local to control module on every fifth floor

F. 21 Supply and install PSB Fire override switches

G. 21 Supply and install PSB smoke detectors

H. 80 Supply and install PSB AOV wall mounted damper ventilators fitted into existing openings and re-install existing grilles

I. 1 Supply and Installation of power and control wiring systems (excluding containment system) between the master control panel and the components of PSB supply.

J. 1 Carriage to site during normal working hours.

K. 1 Testing, commissioning and setting to work the complete corridor smoke control systems including a separate day to instruct the client.

L. 1 Detailed System Design

The engineering design work will consist of the following

- Technical submission
- Cause & Effect chart
- Design of control system software (where applicable)
- Control schematic & cabling selection
- System Layout Plan Drawings

• **Scope: Supply, Delivery, installation and commissioning of the mechanical Smoke ventilation.**

A. 1 Delivery of PSB Smoke exhaust twin axial flow fan sets duct mounted horizontally with fans bolted together in series. (one set per smoke extract riser)

Type : 630 (indicative)
 Motor power : 4.0kW (indicative)
 Motor type : Single speed (frequency inverter)
 Electr. Connection : 3x400V/50Hz
 Temp. Rating : F300 (certified acc. EN 12101-3)
 Tested at 300°C/120min

Accessories :

Flexible connection with duct spigots
 Horizontal mounting feet
 Vibration dampers

B. 1 PSB smoke control fan starter panel on the roof and within 3.0m of the smoke extract fan set. Power supply to the panel should be in accordance with BS8519 for primary and secondary power supplies. Power supplies and associated changeover panel and manual by-pass switch to our panel are to be supplied and installed by others. (one per smoke extract riser) This panel will also provide DOL starting for the environmental fan and control of the plant room by pass dampers

C. 5 Supply and install motorised duct mounted by pass dampers.

D. 23 Supply and install PSB pressure sensors.

E. 5 Supply and installation of fire rated ductwork connecting the two smoke extract risers in the plant room and discharging through the duty standby fan arrangement. Also to connect the environmental fan to the main ductwork arrangement.

F. 1 Supply and Installation of power and control wiring systems to 3 number fans, 5 number dampers and 23 number pressure sensors.(excluding containment system).

G. 1 Carriage to site during normal working hours.

K. 1 Testing, commissioning and setting to work the complete lobby smoke control and environmental systems including a separate day to instruct the client.

L. 1 Detailed System Design

The engineering design work will consist of the following

- Technical submission
- Cause & Effect chart
- Design of control system software (where applicable)
- Control schematic & cabling selection
- System Layout Plan Drawings

Kind regards,

Dave Bradbury
 Design Manager
 Head Office

Tel: [REDACTED] | Fax: [REDACTED] | Mob: [REDACTED] | Email: davidbradbury@jswright.co.uk | Web: www.jswright.co.uk

From: Zak Maynard [mailto:ZMaynard@rydon.co.uk]

Sent: 11 February 2015 14:51

To: David Bradbury

Cc: Terence McLaughlin; Alan Whyte; Simon Lawrence; Adam Marriott
Subject: RE: Grenfell Tower - AOV

Hi David,

Unsurprisingly, the Client are requesting an elemental breakdown of the £112k figure below

If you could break it down to the various main elements this should be sufficient.

Thanks

Zak Maynard, BSc (Hons)
Commercial Manager

T
D

From: David Bradbury [mailto:DavidBradbury@jswright.co.uk]

Sent: 05 February 2015 17:27

To: Zak Maynard

Cc: Terence McLaughlin; Alan Whyte; Simon Lawrence

Subject: Grenfell Tower - AOV

Hi Zak, Further to your conversation this morning with Terence, I've detailed the AOV additional costs below and attached some additional information to help, but any problems please do not hesitate to give me a call.

Breakdown of AOV costs:

JSW Original costs (based on 0.42m3/s): **£80,984.58**

Client Change (Additional Floors): **£13,104.25**

- **Scope: Supply, Delivery, installation and commissioning of the smoke control components serving the lower three floors.**
 - A. 3 Supply and installation only PSB single zone interface modules, mounted on every floor level (these are connected to local override switches, smoke detector, and provide power to the motorised damper/AOV ventilators/stairwell ventilators etc.). Power and control cabling will be by PSB from master smoke control panel. The control modules will be located in local the electrical service riser within the ventilated lobbies.
 - B. 1 Supply and delivery only PSB booster battery packs local to control module on every fifth floor
 - C. 3 Supply and delivery only PSB key operated Fire override switches
 - D. 3 Supply and delivery only PSB smoke detectors
 - E. 3 Supply and delivery only PSB room thermostats
 - F. 6 Supply and install PSB 600mm wide x 1200mm high AOV wall mounted damper/grille assemblies. Ventilators fitted into new wall openings.
 - F. 1 Carriage to site during normal working hours.
 - G. 1 Installation of fire rated cable connecting all components to the control module.
 - H. 1 commissioning on completion.

Required design change for Building Control approval (based on 5m3/s): **£112,032.33**

I've attached the consultant's report detailing the reasons for the increased performance, which has changed the controls, fire rated ductwork in plantroom, increased 'smoke' vent fans (original equipment schedule has been attached for information) and the overall design philosophy has changed and therefore we have attached the specialists technical submission which has been discussed with the consultant, Rydons and the building control officers in a meeting held at Grenfell Tower on the 24th November 2014. The re-design was verbally accepted by

building control at this meeting and the technical submission was formally submitted for their written approval (written confirmation still outstanding).

Total VO: **£125,136.58**

Kind regards,

Dave Bradbury
Design Manager
Head Office

Tel: [REDACTED] | Fax: [REDACTED] | Mob: [REDACTED] | Email: davidbradbury@jswright.co.uk | Web: www.jswright.co.uk

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