



Building Services

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29/11/2024

Attention: Andre Kemble-Smith

Re: 75 Campbell Street Automotive Area Ventilation

Dear Andre,

Following recent inspection and testing onsite of the automotive area at 75 Campbell Street, TCM have made the following observations based on what was witnessed onsite. This executive summary is to be read in conjunction with the supplied spreadsheet. All information is correct as of time of testing.

Basement:

System A:

Is an exhaust system currently serving the Tasnetworks substation (rooms Aurora 1 and 2 on Tastafe map). The system is ducted through the plantroom (AB-19) to room AB-20. The ductwork to these two rooms has been blanked off and provides no exhaust to these areas. Room AB-19/Plantroom is ventilated naturally through the roller door. AB-20 currently has engines stored in this area with no exhaust connected. We assume this was disconnected when the room was used as a lunch room.

The exhaust is run from a manual thermostat in the substation set to 24 degrees, measure of the system found the unit drawing approximately 1650l/s equal 21.6 air changes per hour for the substations.

System B:

The Engine Workshop is a combination of three rooms where walls have been removed (AB-17, AB-18 and AB-02). The Fan is GE-7, the system was drawing 1480l/s of air from the space or 5 air changes per hour. There is a manual damper for makeup air on the external wall of AB-02, this needs to be open to ensure adequate ventilation for the system. The fan is manually controlled via a local switch in the workshop.

System C:

Battery Charging Area – room AB-27 has a dedicated exhaust system exhausting at a rate of 120l/s or 20 air changes per hour. System has local switch but is left operational 24/7.

System D:

Fresh air system into classrooms AB-03 and AB-04 and tool store AB-06. These rooms are served by local split system cassette units for heating and cooling, the units are supplied with fresh air from a fan located in workshop AB-02. The fan is ducted from outside with a filter. Fan was operating at 150l/s which seems slightly inadequate for the classrooms.



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System E:

Engine Exhaust system in room AB-02 is a vehicle exhaust system to connect directly to the exhaust pipes of motor vehicles within the space. System is manually turned on and off locally in the space. Requires outlets to be connected to vehicles for correct operation. System measurements were 223l/s. Exhaust rates at each connection point system seem to be of adequate velocity. Makeup for this system is via the same as System B.

System G:

General Exhaust EF-05 serving Workshop AB-01. Exhaust supplies exhaust at high level via duct with local on/off controls switch. System draw is approximately 2000l/s from the whole workshop space. Make up air is via open roller door. This system serves the Bathurst street side of the workshop.

System H:

General Exhaust EF-06 serving Workshop AB-01. Exhaust supplies exhaust at high level via duct with local on/off controls switch. System draw is approximately 870l/s from the whole workshop space. Make up air is via open roller door. The ductwork for this system had been cut off to make room for a piece of workshop equipment. This leaves Parts store AB-11 with no exhaust. The duct used to run through to this room. This system serves the Northern Suburbs side of the workshop.

Systems G & H offer a combined air change of 10 changes per hour for Workshop AB-01.

System I:

Engine Exhaust system in room AB-01 is a vehicle exhaust system to connect directly to the exhaust pipes of motor vehicles within the space. System is manually turned on and off locally in the space. Requires outlets to be connected to vehicles for correct operation. System measurements were 380l/s. Exhaust rates at each connection point system seem to be of adequate velocity. Makeup for this system is via the same as System G & H.

System J:

Engine Exhaust system in room AB-01 is a vehicle exhaust system to connect directly to the exhaust pipes of motor vehicles within the space. System is manually turned on and off locally in the space. Requires outlets to be connected to vehicles for correct operation. Exhaust rates at each connection point system seem to be of excellent velocity. Makeup for this system is via the same as System G & H.

System K:

Room AB-13 Natural ventilation from the back of the room into the carpark. If door into corridor AB-02 is open this will act as fresh air makeup to AB-01.

System L:

Welding space in room AB-16 annex has no mechanical ventilation. Suggest relocating redundant Nederman system from AG-01 and installing a wall fan for General smoke type exhaust.

System M:

In fuel store AB-15 there is a flammable storage cupboard which has the vents closed off. This may need an explosion proof fan fitted.

System N:

Fuel store AB-15 has a dedicated exhaust fan to the room via one grille exhaust approximately 112l/s at 7.2 air changes per hour.

Ground Floor:

System O:

Room AG-40 now including rooms AG-41 & 42. Served by a dedicated exhaust system drawing 1320l/s at 18.3 air changes per hour/. Ductwork is a high level, there is no makeup air with roller door closed. Roller door needs to be opened to provide make air however this may create security issues. Make up air with door shut is drawn from the other occupied areas.

System P:

Room AG-40 has also a dedicated muffler exhaust system. 3 nederman reels connected to a main carpark exhaust duct via dedicated nederman fan. Total 322l/s @ good velocity for duct size.

System Q:

There is a flammable storage box with no dedicated exhaust, cabinet vents are open to the room. If the system is turned off this could build up in the space. There are also a series of batteries stored on the bench with near by exhaust.

System R:

Rooms AG-01 and 04 have been combined into one space, walls around AG-04 removed. There is a high level exhaust system with 8 grilles in total, 6 with AG-01 and 2 within AG-03. System manually controlled from space. System make up air was setup onsite in conjunction with Tastafe WH&S team whilst onsite, total air for the system is 1290l/s offering 6.6 air changes per hour for room AG-01 and 15 air changes per hour for AG-03. Roller needs to be opened 500mm above finished floor level to achieve the desired air flow. Suggest a rebalance of the area to increase exhaust from AG-01 and installation of a permanent ducted and filtered makeup air system. When using roller door as makeup this is open directly to the carpark and may draw additional CO dependant on traffic and wind conditions.

System S:

Room AG-01 also has a dedicated muffler exhaust system. Three reels connected offering a total of 105l/s when tested. The outlet of this system discharges to the plant area. May need attention.

System T:

2nd Room AG-01 dedicated muffler exhaust, low level system to connect directly to cars exhaust. System velocities ok.

System U:

Room AG-04 has a redundant nederman arm previously used for welding. This is the recommended system to relocate to room AB-16 as previous comment.

System V:

This is a redundant supply air system, which was causing issues in the library area. Location of this system was allowing under certain conditions via the riser, as this system served multiple floors. Suggest this may have been original make up air for this area.

System W:

AG-03 has a small dedicated exhaust from fuel injection devices. Directly connected. Make up requirements minimal from AG-01.

System X:

There appears to be redundant fresh air fan system for room AG-04. System isolated and or redundant? May be able to be utilised for makeup air with further investigation.

System Y:

Old Exhaust from AG-04, duct is open, drawing 180l/s from the space via natural room pressure.

General System comments:

None of the systems are intrinsically safe, all wiring and motors are of standard construction, and not suitable for explosive fumes.

Building and system modifications have taken place over time with due consideration of the operational requirements of both the mechanical systems and relief air as well as the operational requirements of the space.

As the primary objective of the space is to maintain a negative pressure for exhausting, the use of magnehelic gauges will provide no benefit for day-to-day operation of the space.

The primary issue as we see many complaints is that when the exhaust systems are operational the makeup air is coming from direct ambient conditions and is unfiltered and subject to wind influence. This can make the space feel uncomfortable in low/mild activities.

We hope this satisfies your requirements, and please do not hesitate to contact us if you have any questions.

Regards,

A handwritten signature in black ink, reading "J. A. McNeill". The signature is written in a cursive, flowing style with a large initial "J" and "M".

Justin McNeill
Director

