

<b>Equipment</b>	<b>Fume Extraction system</b>
<b>Laboratory</b>	<b>Histology</b>
<b>Business Unit</b>	<b>NMAL</b>
<b>Requisition</b>	<b>Manual Requisition 0007224</b>

RE: Recommendations for the Mthatha Nelson Mandela Academic Hospital NHLS Histology Laboratory

### **Recommendations: Laboratory fume extraction system**

1. The Lab/Rooms to have negative pressure in relation to adjacent areas
2. Doors and windows to remain closed at all times
3. At least a minimum of 6 air changes per hour (ACH) for a Histology laboratory as per ASHE Standard 170-2017
4. Re-route rooms extraction air from centralized system to dedicated extraction using a duct inline fan
5. Inline duct extraction fan which is capable of 2600m<sup>3</sup>/h with duty pressure of 500pa to archive at most 12ACH – to extract all the room air to the atmosphere.

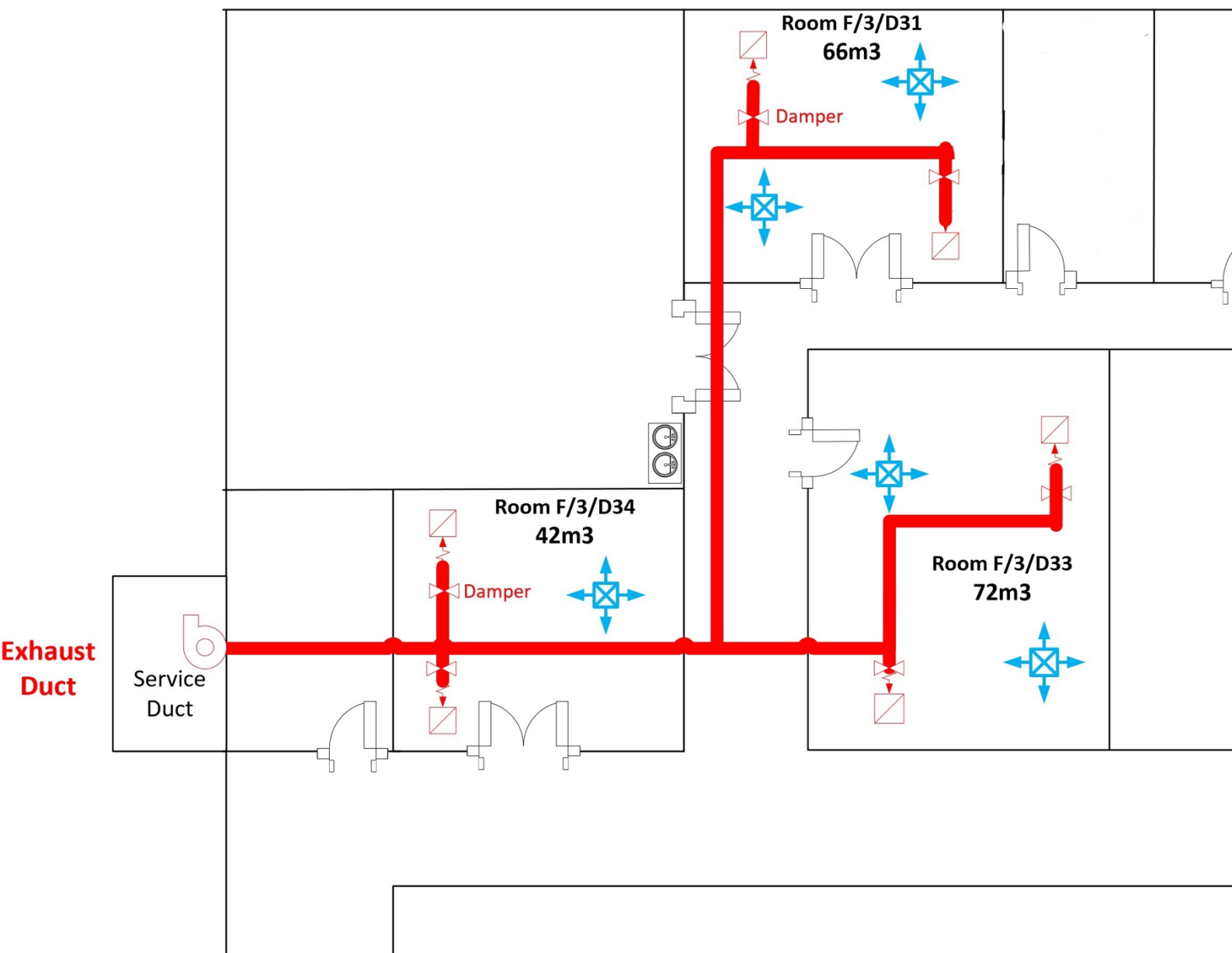
Room Name	Room Space Volume	Room Exhaust Air Volume
<b>Room F/3/D31</b>	<b>66m<sup>3</sup></b>	792 m <sup>3</sup> /h
<b>Room F/3/D33</b>	<b>72m<sup>3</sup></b>	864 m <sup>3</sup> /h
<b>Room F/3/D34</b>	<b>42m<sup>3</sup></b>	504 m <sup>3</sup> /h
<b>Total</b>		<b><u>2160 m<sup>3</sup>/h</u></b>

6. All rooms to have new extraction points/grills connected with a fan with steel hard ducting
7. Each room duct branch to have a dedicated duct manual damper to regulate the amount of air exhausted from each room.
7. Room air to be extracted to outdoor at a height above roof level through a service duct or building wall.
8. Suitable replaceable Carbon filters to neutralize harmful vapours with the release of fresh air
9. The existing air conditioner should continue to provide cooling in the room
10. Should have adjustable controls for speed and pressure (regulation) and should be able to switch on and off as independent systems in each room
11. The centralized supply air systems may continue to provide sufficient air in the room using new diffusers



APPENDIX A: Supply and Exhaust Air Scheme

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