

Equipment	Fume Extraction system
Laboratory	Histology
Business Unit	NMAL
Requisition	Manual Requisition 000 7224

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

Date: 14th of November 2021.

Recommendations: Laboratory fume extraction system

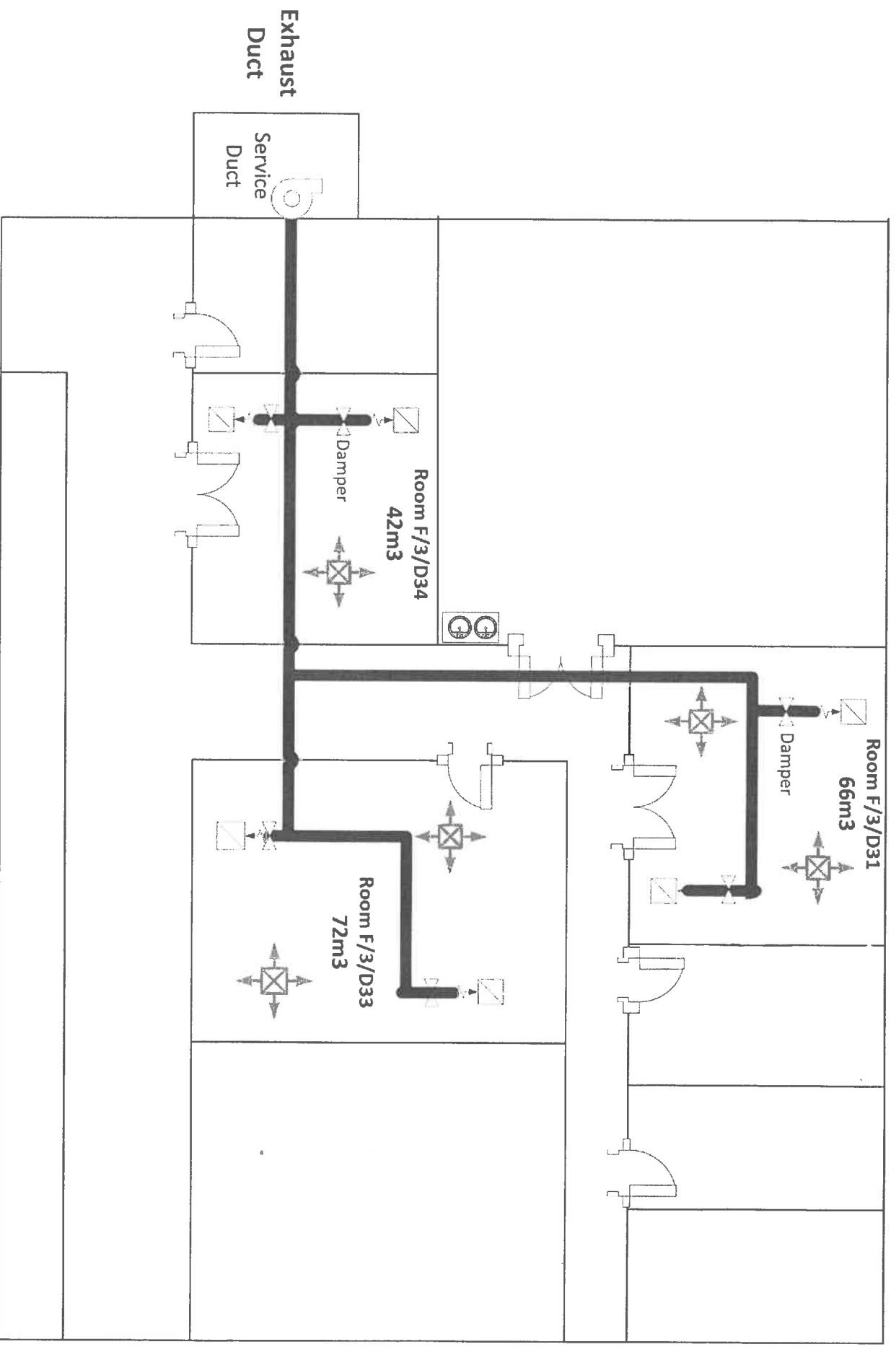
1. The Lab/Rooms to have negative pressure in relation to adjacent areas
2. Doors and windows to remain closed at all times
3. At least a minimum of 6 air changes per hour (ACH) for a Histology laboratory as per ASHE Standard 170-2017
4. Re-route rooms extraction air from centralized system to dedicated extraction using a duct inline fan
5. Inline duct extraction fan which is capable of 2600m³/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
Room F/3/D31	66m ³	792 m ³ /h
Room F/3/D33	72m ³	864 m ³ /h
Room F/3/D34	42m ³	504 m ³ /h
Total		<u>2160 m³/h</u>

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. The existing split air conditioner may continue to provide cooling in the room
9. The centralized supply air systems may continue to provide sufficient air in the room using new diffusers

APPENDIX A: Supply and Exhaust Air Schematic:
End.

APPENDIX A: Supply and Exhaust Air Scheme





NATIONAL HEALTH LABORATORY SERVICE

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Equipment	Fume Extraction system
Laboratory	Histology
Business Unit	NMAL
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Area				Compliant	Not Complaint												
Type	Air Purification System																
Pressure type	Negative pressure room in relation to adjacent areas																
Air changes	Minimum of 6 air changes per hour																
Area to cover	<table><tr><th>Room Name</th><th>Room Space Volume</th><th>Room Exhaust Air Volume</th></tr><tr><td>Room F/3/D31</td><td>66m3</td><td>792 m3/h</td></tr><tr><td>Room F/3/D33</td><td>72m3</td><td>864 m3/h</td></tr><tr><td>Room F/3/D34</td><td>42m3</td><td>504m3/h</td></tr></table>			Room Name	Room Space Volume	Room Exhaust Air Volume	Room F/3/D31	66m3	792 m3/h	Room F/3/D33	72m3	864 m3/h	Room F/3/D34	42m3	504m3/h		
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Extraction points	All rooms to have new extraction points/grills connected with a fan with steel hard ducting																
Height	Extracted to outdoor at a height above roof level																
Air	Re-route rooms' extraction air from centralised system to dedicated room extraction using a duct inline fan																
Extraction Fan	Inline duct extraction fan capable of 2200m3/hour with duty pressure of 500 pa to archive at least 12 ACH- to extract all the room air to the atmosphere																
Diffusers	Install new diffusers on existing centralised supply air system																
Noise level	Low																
Regulation	Each room to have a dedicated duct manual damper to regulate the amount of air exhausted from each room. System should be able to switch off and on with a switch.																
Other requirement	Compulsory site visit for compilation of quotation																
System lay-out	Sketch of planned system ducting and extraction fans to be included with quotation																



**NATIONAL HEALTH
LABORATORY SERVICE**

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Date:	19/08/2024		