



11 Commercial Street - Newport



Ventilation Airflow Calculations

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Revision

A

Prepared By

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Project			11 Commercial Street - Newport				Calcauted By		Shane Burchell		Date		15/06/2025			
			Kitchen Ventilation Systems						Midnight Design & Consultancy				Rev A			
System	Floor	Room/ Reference	Squared Area	Ceiling Height	Area Volume	Air Change Per Hour	No. Of Occupants	Flow Rate Per Unit	Airflow M3/Hr	Airflow M3/Sec	Velocity	Cirular Duct Size	Known Square Duct Size	x	Square Duct Size	
			(m)	(m)	(m³)	ACH	No.	l/s	m³/Hr	m³/Sec	m/s	ø	mm	x	mm	
Kitchen Extract System 01	Ground	Kitchen 01						800		0.800	6.4	399	500	x	250	
	Ground	Kitchen 02						800		1.600	6.7	552	600	x	400	
	Ground	Kitchen 03						800		2.400	8.6	596	700	x	400	
	Ground	Kitchen 04						800		3.200	8.8	681	900	x	400	
						SYSTEM 01 - REQUIRED AIRFLOW			11520	3.200	8.8	681	900	x	400	
Kitchen Extract System 02	Ground	Kitchen 06						800		0.800	6.4	399	500	x	250	
	Ground	Kitchen 07						800		1.600	6.7	552	600	x	400	
	Ground	Kitchen 08						800		2.400	8.6	596	700	x	400	
							SYSTEM 02 - REQUIRED AIRFLOW			8640	2.400	8.6	596	700	x	400
Kitchen Extract System 03	Ground	Kitchen 09						800		0.800	6.0	412	500	x	270	
	Ground	Kitchen 10						800		1.600	6.7	552	600	x	400	
	Ground	Kitchen 11						800		2.400	8.6	596	700	x	400	
							SYSTEM 03 - REQUIRED AIRFLOW			8640	2.400	8.6	596	700	x	400
	Note: Canopies are avised to be calculated using the thermal coefficient method from DW 172. As the food hall will change vendors frequently, it is advised to calculate a 2500mm canopy based on the face velocity method, totalling 0.800 m3/sec per canopy. Only electric equipment shall be used under each canopy and 300mm overhang to the front and sides should be adhered to.															
									Airflow M3/Hr	Airflow M3/Sec	Velocity	Cirular Duct Size	Known Square Duct Size	x	Square Duct Size	
									OVERALL REQUIRED AIRFLOW	28800	8.000	9.0	1064	1000	x	890

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Project	The High Street Cardiff
	Heated Supply Systems

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Midnight Design & Consultancy	

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