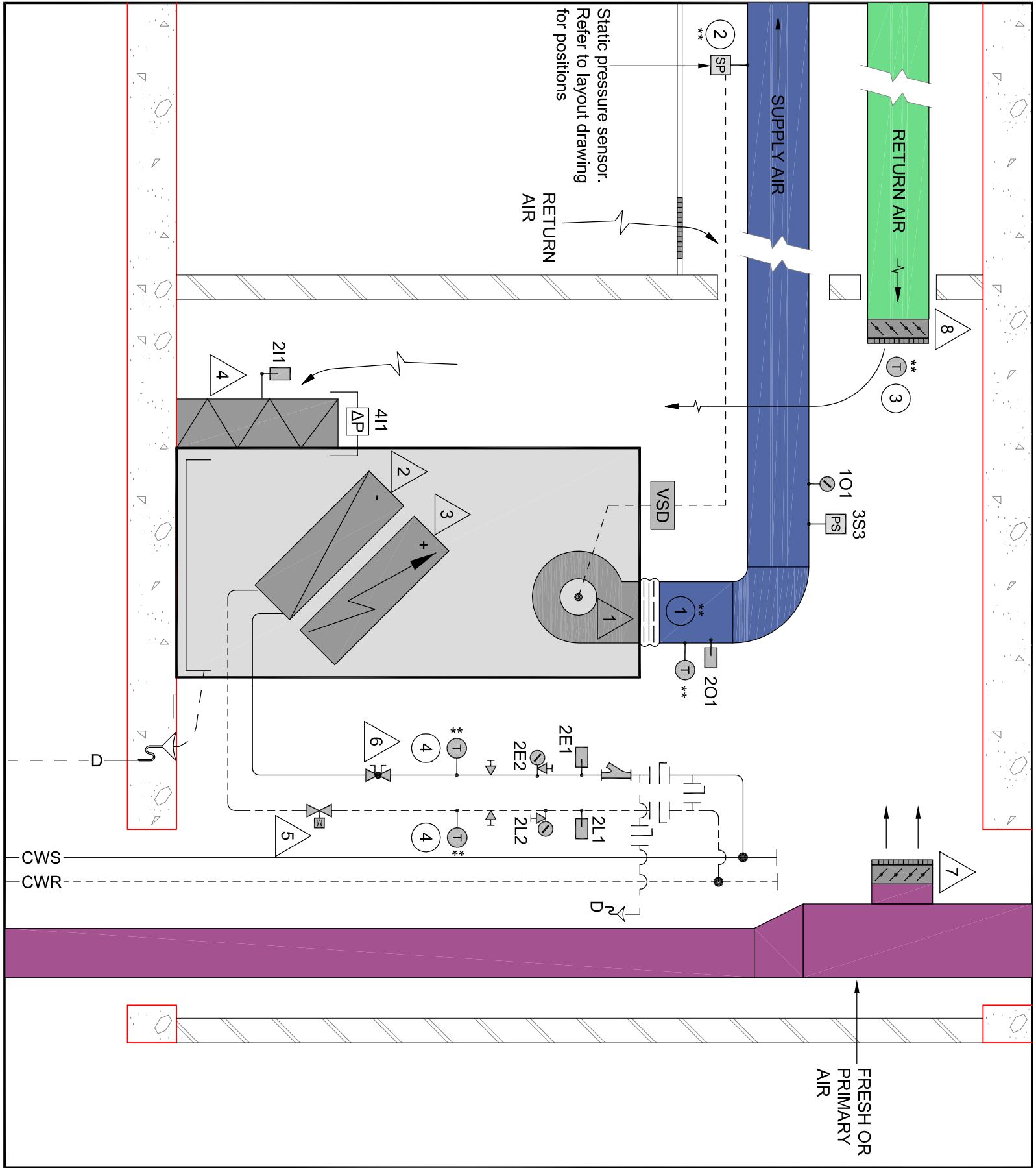
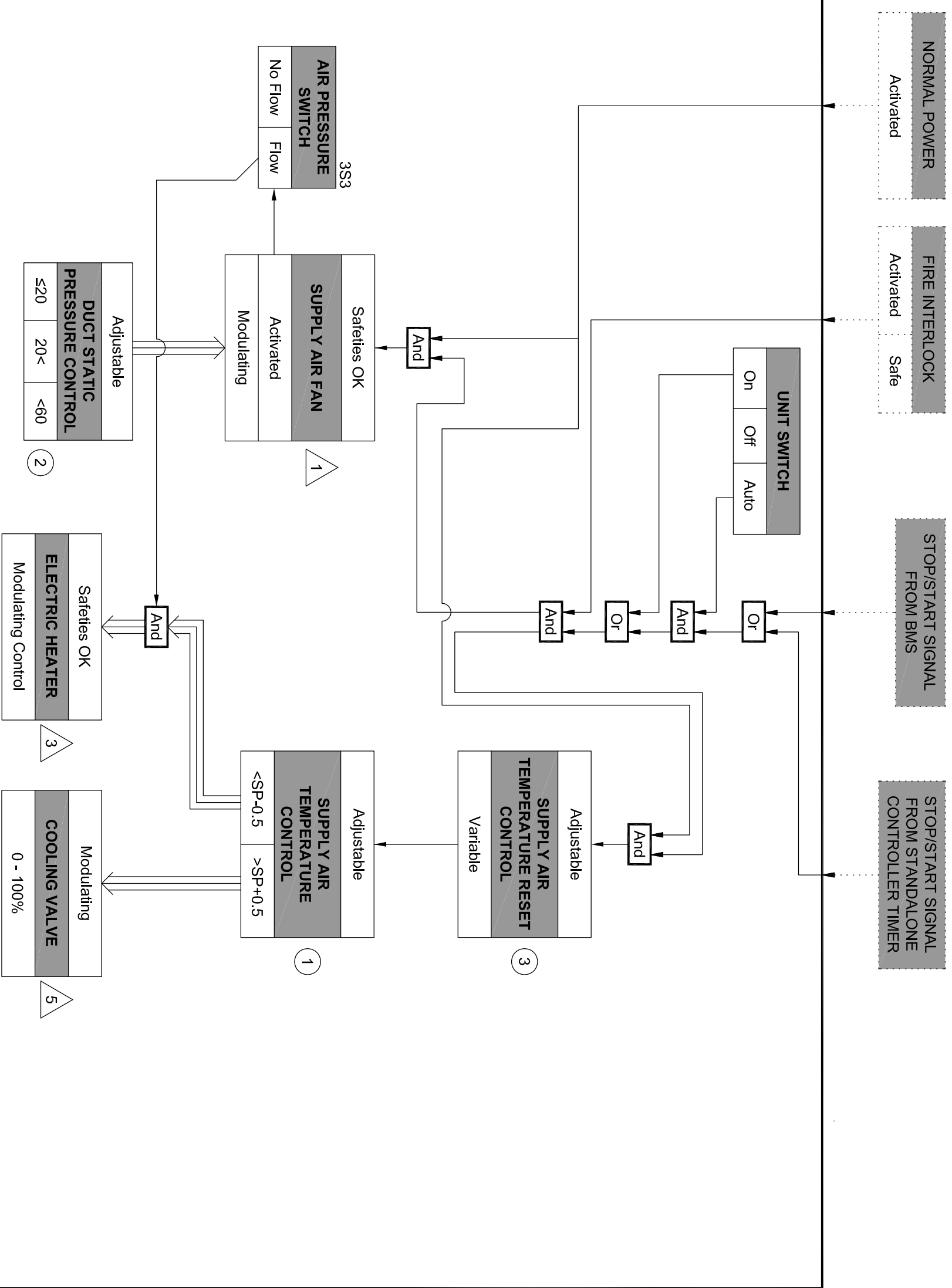


Subsystem Schematic



Operating Sequence



Subsystem Equipment Performance

Subsystem Interface to Process & from system	No:	Subsystem process equipment	Instruments Process		Instruments Energy		Safeties	Code
			Input	Output	Entering	Leaving		
SUPPLY AIR ____ l/s	1	VARIABLE VOLUME SUPPLY AIR FAN ESP ____ Pa		FAN PRESSURES Total Velocity ____ Pa Static ____ Pa	* Motor rating ____ kW FLA ____ A Voltage ____ V Power factor ____		Power Fuse ____ A Control Fuse ____ A Overheat ____ °C Air Pressure Switch ____ Pa Countdown Timer ____ min	1S1 1S2 1S3 1S4
	2	COOLING COIL Air ΔP ____ kWPa Make-up ____ kPa		AIR TEMPERATURE ____ °C db ____ °C wb	211 ____ °C db ____ °C wb			
	3	ELECTRIC HEATER ____ kW Steps		AIR TEMPERATURE ____ °C db	*			
	4	UNIT AIR FILTER Static ΔP ____ Pa Clean ____ Pa Dirty ____ Pa		MAGNAHELIC FILTER GAUGE Pa Clean Pa Dirty	411			
CHILLED WATER ____ l/s	5	2 WAY MODULATING COOLING VALVE Size ____ mm ΔP ____ kPa						Manual Override
	6	BALANCING VALVE Size ____ mm ΔP ____ kPa						
OUTSIDE AIR ____ l/s	7	OUTSIDE AIR NON-MOTORISED DAMPER ____ l/s		AIR TEMPERATURE ____ °C db	*			
RETURN AIR ____ l/s	8	RETURN AIR NON-MOTORISED DAMPER ____ l/s		AIR TEMPERATURE ____ °C db	*			

Automatic Control

Monitoring

No:	Control	Control range	No:	Controlled element	Status of element	Controlled variable	Control action	Remarks
1	SUPPLY AIR TEMPERATURE CONTROL	10°C - 20°C	3	ELECTRIC HEATER & MFC	INDICATE ON BMS	DISPLAY AND LOG ON BMS	Adjustable Setpoint SP+1°C SP-1°C	1. PI control for cooling valve and heater fully adjustable for response. 2. Alarm limits to move when setpoint is reset. 3. Setpoint to be reset from BMS. 4. For heater control refer to specification.
2	STATIC PRESSURE CONTROL	0 - 75 Pa	1	VARIABLE AIR VOLUME SUPPLY AIR FAN		DISPLAY AND LOG ON BMS	Adjustable Setpoint SP+1°C SP-1°C	1. PI control for static pressure.
3	SUPPLY AIR TEMPERATURE RESET	10°C to 20°C	1	SUPPLY AIR TEMPERATURE CONTROL		INDICATE ON BMS	Adjustable Setpoint SP+1°C SP-1°C	1. PI control for static pressure.
4	MONITORING				DISPLAY ON BMS: - Dirty filter	DISPLAY AND LOG ON BMS: - Supply and return chilled water		

Revisions:

Rev.	Description	Date	By
0	Issued for tender	01.11.2017	PMB

Legend:

- * - To be measured by portable instrument.
- * k - Indication displayed on BMS.
- - Remote signal.
- To be completed by subcontractor at equipment submission stage.
- Means that all safeties are closed (normal).
- Measured on Motor Control Centre board.
- Audible/visual alarms when value is exceeded.
- H - High limit.
- L - Low limit.
- As per motor name plate.

SAFETIES OK

- Pressure gauge and cock
- Thermometer
- Air pressure switch
- Duct static pressure sensor
- Brider test point (pressure and temperature)
- Variable speed drive
- Return air filter
- Cooling coil
- Electric heater
- Non-motorsed damper
- Supply air fan
- Chilled water supply piping
- Chilled water return piping
- Drain piping

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SARS ALBERTON

AHU Upblow CHW VAV with Heating, Primary Air Filter & Ducted Fresh Air

Designed	Drawn	Checked	Released	Date	Size
MD	FMB	SE	MD	01.11.2017	A1
					Scale
					NTS
Drawing Status: Issued for Tender					
Project Number	Division	Service	Drawing Number	Revision	
17389	M	A	105	0	