

COMMISSIONING FILE

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2. DESCRIPTION OF OPERATION

2.1. 3rd Floor Extract Fans EF3/01, EF3/02, EF3/03, EF3/04, EF3/05 and EF3/06

Level 3 is served by 6 extract fans, EF3/01, EF3/02, EF3/03, EF3/04, EF3/05 and EF3/06. The fans are powered and controlled via the 3rd floor MCC01 control panel. The fans extract air from the 3rd floor office area.

2.1.1. Automatic Operation

The 3rd floor office extract fans are enabled by the BMS 3rd floor time clock.

Once an enable signal is received, the BMS sends a start command to the extract fans. The BMS monitors the status of each extract fan via it's associated current sensing relay. If, after initiating the start signal for the fan and after a predetermined time delay of 30 seconds, the relay does not register current, an alarm message is generated by the BMS outstation and sent to the BMS Supervisor.

2.1.2. Shutdown

When the extract fans are no longer required to operate, they will be configured as follows: -

- | | |
|----------------------|----------|
| • EF3/01 extract fan | Disabled |
| • EF3/02 extract fan | Disabled |
| • EF3/03 extract fan | Disabled |
| • EF3/04 extract fan | Disabled |
| • EF3/05 extract fan | Disabled |
| • EF3/06 extract fan | Disabled |

2.1.3. Hand Operation

There is no 'hand operation' associated with the plant.

2.1.4. Fire System Interlock

The plant will be shutdown directly by the fire alarms hard-wired interlock. The BMS monitors the fire alarm and on receipt of a fire signal, an alarm is generated at the BMS outstation and sent to the BMS Supervisor.

2.1.5. Safety Interlocks

The following hard-wired interlocks must be intact before the extract fans are able to run: -

- Fire alarm system healthy

2.1.6. Summary of Alarms

The following alarms will be generated by the BMS outstation and sent to the BMS supervisor: -

- 3rd floor extract fan EF3/01 failure, as detected by current sensing relay.
- 3rd floor extract fan EF3/02 failure, as detected by current sensing relay.
- 3rd floor extract fan EF3/03 failure, as detected by current sensing relay.
- 3rd floor extract fan EF3/04 failure, as detected by current sensing relay.
- 3rd floor extract fan EF3/05 failure, as detected by current sensing relay.
- 3rd floor extract fan EF3/06 failure, as detected by current sensing relay.

2.2. 5th Floor Extract Fans EF5/01, EF5/02, EF5/03, EF5/04, EF5/05 and EF5/06

Level 5 is served by 6 extract fans, EF5/01, EF5/02, EF5/03, EF5/04, EF5/05 and EF5/06. The fans are powered and controlled via the 5th floor MCC01 control panel. The fans extract air from the 5th floor office area.

2.2.1. Automatic Operation

The 5th floor office extract fans are enabled by the BMS 5th floor time clock.

Once an enable signal is received, the BMS sends a start command to the extract fans. The BMS monitors the status of each extract fan via it's associated current sensing relay. If, after initiating the start signal for the fan and after a predetermined time delay of 30 seconds, the relay does not register current, an alarm message is generated by the BMS outstation and sent to the BMS Supervisor.

2.2.2. Shutdown

When the extract fans are no longer required to operate, they will be configured as follows: -

- | | |
|----------------------|----------|
| • EF5/01 extract fan | Disabled |
| • EF5/02 extract fan | Disabled |
| • EF5/03 extract fan | Disabled |
| • EF5/04 extract fan | Disabled |
| • EF5/05 extract fan | Disabled |
| • EF5/06 extract fan | Disabled |

2.2.3. Hand Operation

There is no 'hand operation' associated with the plant.

2.2.4. Fire System Interlock

The plant will be shutdown directly by the fire alarms hard-wired interlock. The BMS monitors the fire alarm and on receipt of a fire signal, an alarm is generated at the BMS outstation and sent to the BMS Supervisor.

2.2.5. Safety Interlocks

The following hard-wired interlocks must be intact before the extract fans are able to run: -

- Fire alarm system healthy

2.2.6. Summary of Alarms

The following alarms will be generated by the BMS outstation and sent to the BMS supervisor: -

- 5th floor extract fan EF5/01 failure, as detected by current sensing relay.
- 5th floor extract fan EF5/02 failure, as detected by current sensing relay.
- 5th floor extract fan EF5/03 failure, as detected by current sensing relay.
- 5th floor extract fan EF5/04 failure, as detected by current sensing relay.
- 5th floor extract fan EF5/05 failure, as detected by current sensing relay.
- 5th floor extract fan EF5/06 failure, as detected by current sensing relay.

2.3. Level 3 & 5 General Office Supply VAVs

The office supply VAVs are controlled via local controllers, namely the MNL V2R. This is a stand-a-lone intelligent DDC controller, which is connected on to the LON communications network. The controllers are mounted directly on the supply VAVs chassis's. Each VAV box is provided with a volume control damper and VAV box airflow grid. The VAVs are located within the ceiling void of the 3rd and 5th floors.

2.3.1. Automatic Operation

When an occupancy signal is present, the VAVs will be enabled.

A VAV airflow grid, located in the flow path of the air volume control damper, is then used to modulate the volume control damper, to maintain the VAVs calculated flow setpoint.

2.3.2. Shutdown

At the end of the occupancy period the system will configure as follows: -

- Supply volume control damper Closed.

2.3.3. Hand Operation

There is no hand operation control associated with the apartment VAVs.

2.3.4. Fire System Interlock

The VAVs will be shutdown when the fire alarms software interlock is received. The BMS monitors the fire alarm and on receipt of a fire signal the VAVs are shutdown via the network, an alarm is generated at the BMS outstation and sent to the BMS supervisor.

2.3.5. Fireman's Switch

The VAVs will be shutdown by the fireman's switch's hard-wired interlock with the associated fresh air AHU's MCP is received. The BMS monitors the fireman's switch and on receipt of an "Off" or "Extract" signal the VAVs are shutdown, an alarm is generated at the BMS outstation and sent to the BMS supervisor.

2.3.6. Safety Interlocks

The following software interlocks must be intact before the above plant is able to run: -

- Fire alarm healthy.
- Fireman's switch in "Auto".

2.3.7. Summary of Alarms

There are no alarms associated with the VAVs.

2.4. Consumption Metering

The BMS will calculate the following readings for each meter:-

- Current consumption rate
- Daily consumption rate
- Weekly consumption rate
- Monthly consumption rate
- Yearly consumption rate

These readings can be viewed via the BMS Supervisor.

2.4.1. 3rd Floor MCC01 Control Panel

The following points will be monitored via a pulsed input: -

- Electricity meter no.1.
- Electricity meter no.2.

2.4.2. 5th Floor MCC01 Control Panel

The following points will be monitored via a pulsed input: -

- Electricity meter no.1.
- Electricity meter no.2.

2.5. Miscellaneous Monitoring

The following points will be monitored by the BMS and displayed on the BMS supervisor. Alarms will be generated at the BMS outstation and sent to the BMS Supervisor: -

2.5.1. 3rd Floor MCC01 Control Panel

- Sump pump alarm.
- Fire alarm status.

2.5.2. 5th Floor MCC01 Control Panel

- Sump pump alarm.
- Fire alarm status.

2.6. Glossary of Terms and Abbreviations

The following gives the meaning of the various specialist terms and abbreviations which may be used in this description of operation:

<u>Term / Abbrev.</u>	<u>Meaning</u>
°C	Degrees Centigrade.
%RH	Percentage of Relative Humidity.
A/C	Air Conditioning.
AHU	Air Handling Unit.
BMS	Building Management System.
Building Management System	A building control system which comprises distributed 'intelligent' intercommunicating components, each of which can to some degree be remotely interrogated and/or share information with other components linked to the system.
CHP	Combined Heating and Power.
CHW	Chilled Water.
CO ²	Carbon Dioxide.
CT	Constant Temperature.
C.W.	Cold Water.
DHWS	Domestic Hot Water System.
DPS	Differential Pressure Switch.
DX	Direct Exchange.
HRU	Heat Recovery Unit
Inverter	Colloquialism for a Frequency Converter or Variable Speed Controller (VSC).
HWS	Hot Water System.
kWh	Kilo watt hours.
L/s	Litres per second.
LV	Low Voltage.
LPHW	Low Pressure Hot Water.
MCP	Motor Control Panel.
Node	The term for any addressable device which is directly connected to any part of the network.

<u>Term / Abbrev.</u>	<u>Meaning</u>
OSS	Optimum Start Stop.
Outstation	A micro-processor based programmable multi-functional controlling and / or monitoring device with an in-built network communication facility.
Pa	Pascals.
PCE	Plant Control Enclosure
P+I	P+I
PPM	Particles per million.
Sensor	A sensing device giving an analogue output signal (as opposed to a thermostat or pressure switch, for instance)
Set point	The value at which the controlled variable is required to be maintained.
Supervisor	A computer (normally a PC) which is connected to the BMS network and can interrogate the network (read from and write to) devices on the network via proprietary BMS supervisor software programme.
VT	Variable Temperature.

2

2

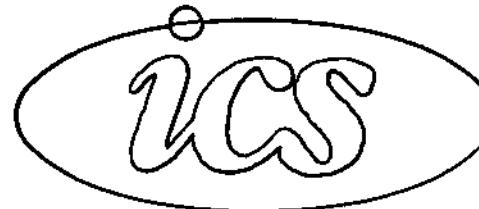
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SECTION 2

AS BUILT CONTROL PANEL DRAWINGS

Web Site - www.icsbms.co.uk

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REV.	DESCRIPTION	DATE	INITIAL
A	FOR APPROVAL	MAR'09	AJ

CON:1286

DRAWING : COMMS ARC
EXCHEQUER COURT

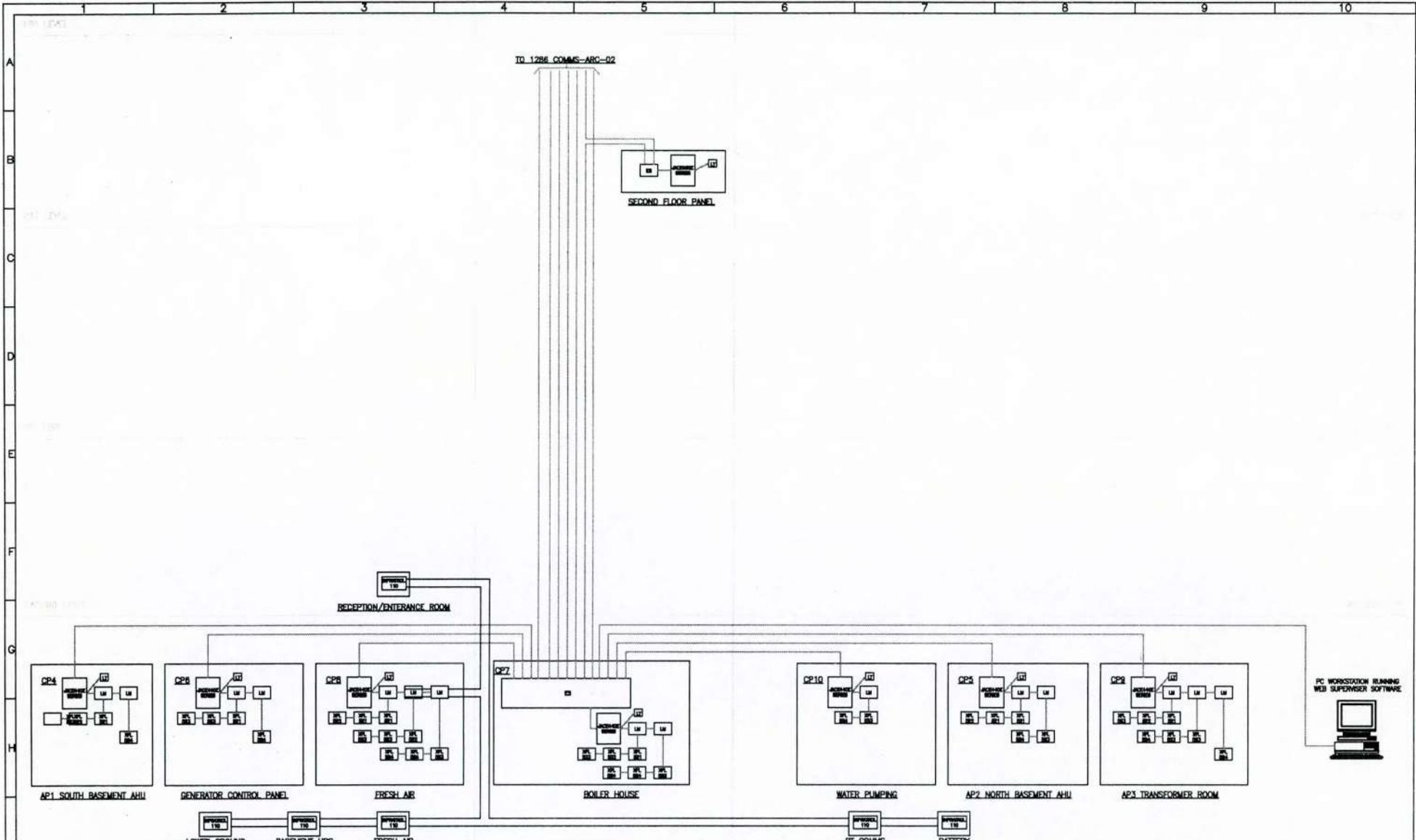
PROJECT : EXCHEQUER COURT

LOCATION : ST MARY AXE, LONDON EC3

CONSULTANT : SALE GROUP

CUSTOMER : SALE GROUP

DRAWING No. : 1286 - COMMS - 0



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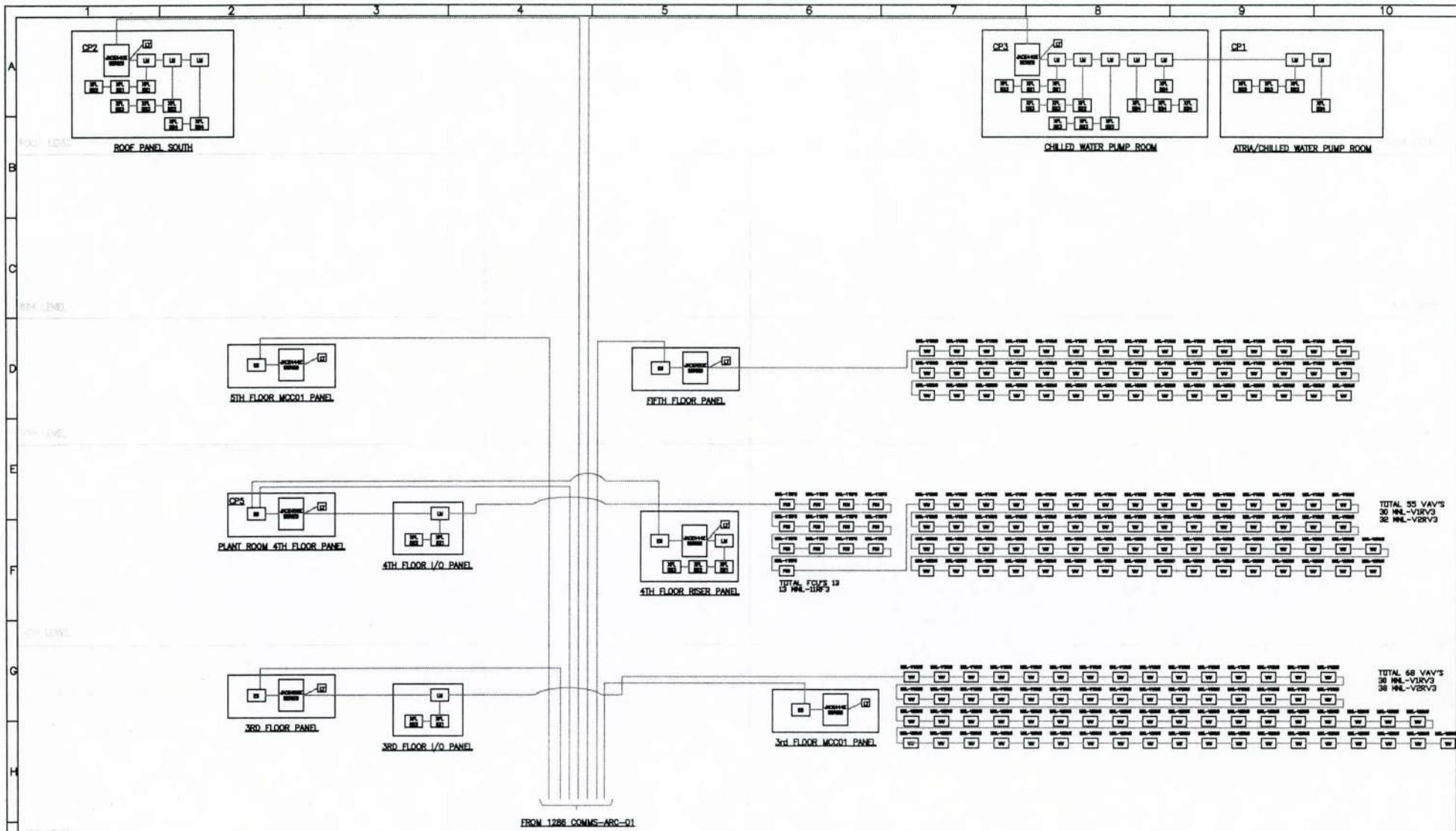
GENERAL NOTES
 CAT 5
 THINNET PAIR UNSHIELDED
 LT = LOW TERMINATOR
 ET = ETHERNET SWITCH
 TEL = HONEYWELL MODULE
 LS = LOW MODULE

ANKE T SERIES
= CONTROLLER

REV.	DESCRIPTION	DATE	INITIAL
A	FOR APPROVAL	MAR'09	AJ

COMMS ARC
EXCHEQUER COURT
(AS MODIFIED FROM 1222)

PROJECT EXCHEQUER COURT	DRG No.
LOCATION ST MARY AXE, LONDON EC3	CON:1286 - COMMS - 1
CONSULTANT SALE GROUP	
CUSTOMER SALE GROUP	
DRN. AJOHNSON	
CHKD. D.NICOLLE	
DATE MAR'09	SHEET 1 OF 2



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GENERAL NOTES

- DAY 8
- TWISTED PAIR UNSHIELDED
- LT — LOW TERMINATOR
- ET — ETHERNET SWITCH
- TEL — HONEYWELL MODULE
- LOW — LOW MODULE

JACK T SERIES
— CONTROLLER

REV.

DESCRIPTION

DATE

INITIAL

TITLE

COMMS ARC
EXCHEQUER COURT
(AS MODIFIED FROM 1222)

PROJECT EXCHEQUER COURT
LOCATION ST MARY AXE, LONDON EC3

CONSULTANT SAFL GROUP

CUSTOMER SAFL GROUP

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CON:1286

DRAWING : 3rd FLOOR MCC01
CONTROL PANEL

PROJECT : EXCHEQUER COURT

LOCATION : LONDON

CONSULTANT : CBRE

CUSTOMER : SALE GROUP

REVISION : B AS BUILT/TESTED



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Contract No. CON1286 3rd FLOOR MCC01
Project EXCHEQUER COURT
Location LONDON
Consultant CBRE
Customer SALE GROUP
Issue B AS BUILT/TESTED

Drawing No.	Sheet Contents
1286-3RD-MCC1-00	COVER SHEET
1286-3RD-MCC1-i	INDEX SCHEDULE
1286-3RD-MCC1-ii	RELAY SCHEDULE
1286-3RD-MCC1-iii	ISSUE A
1286-3RD-MCC1-iv	ISSUE B
1286-3RD-MCC1-01	MAINS INCOMING
1286-3RD-MCC1-02	EXTRACT FAN EF3/01
1286-3RD-MCC1-03	EXTRACT FAN EF3/02
1286-3RD-MCC1-04	EXTRACT FAN EF3/03
1286-3RD-MCC1-05	EXTRACT FAN EF3/04
1286-3RD-MCC1-06	EXTRACT FAN EF3/05
1286-3RD-MCC1-07	EXTRACT FAN EF3/06
1286-3RD-MCC1-08	BMS INCOMING + FIRE ALARM RELAY
1286-3RD-MCC1-09	TRIDIUM JACE 444E CONTROLLER & ETHERNET CONNECTION
1286-3RD-MCC1-10	1-8 DIGITAL OUTPUTS
1286-3RD-MCC1-11	1-8 UNIVERSAL INPUTS & 4 ANALOGUE OUTPUTS
1286-3RD-MCC1-12	1-8 DIGITAL OUTPUTS
1286-3RD-MCC1-13	1-8 UNIVERSAL INPUTS & 4 ANALOGUE OUTPUTS
1286-3RD-MCC1-14	PANEL DIMENSIONS
1286-3RD-MCC1-15	LABEL DETAILS



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Contract No. CON1286 3rd FLOOR MCC01

Project EXCHEQUER COURT

Location LONDON

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Issue B AS BUILT/TESTED

Page 1

Contact Number On Sheet Number

Relay No.	Relay Function	Coil	1st	2nd	3rd	4th	LOCATION
R1	EXTRACT FAN EF3/01 ENABLE	2	2	2			POWER
R2	EXTRACT FAN EF3/02 ENABLE	3	3	3			POWER
R3	EXTRACT FAN EF3/03 ENABLE	4	4	4			POWER
R4	EXTRACT FAN EF3/04 ENABLE	5	5	5			POWER
R5	EXTRACT FAN EF3/05 ENABLE	6	6	6			POWER
R6	EXTRACT FAN EF3/06 ENABLE	7	7	7			POWER
FR1	FIRE ALARM SYSTEM ACTIVATED	8	1	13			POWER
BMSR1	EXTRACT FAN EF3/01 ENABLE	10	2	SPARE			BMS
BMSR2	EXTRACT FAN EF3/02 ENABLE	10	3	SPARE			BMS
BMSR3	EXTRACT FAN EF3/03 ENABLE	10	4	SPARE			BMS
BMSR4	EXTRACT FAN EF3/04 ENABLE	10	5	SPARE			BMS
BMSR5	EXTRACT FAN EF3/05 ENABLE	10	6	SPARE			BMS
BMSR6	EXTRACT FAN EF3/06 ENABLE	10	7	SPARE			BMS



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Project EXCHEQUER COURT
Location LONDON
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Issue A FOR APPROVAL

Drawing No.	Sheet Contents
1286-3RD-MCC1-00	FOR APPROVAL
1286-3RD-MCC1-01	FOR APPROVAL
1286-3RD-MCC1-02	FOR APPROVAL
1286-3RD-MCC1-03	FOR APPROVAL
1286-3RD-MCC1-04	FOR APPROVAL
1286-3RD-MCC1-05	FOR APPROVAL
1286-3RD-MCC1-06	FOR APPROVAL
1286-3RD-MCC1-07	FOR APPROVAL
1286-3RD-MCC1-08	FOR APPROVAL
1286-3RD-MCC1-09	FOR APPROVAL
1286-3RD-MCC1-10	FOR APPROVAL
1286-3RD-MCC1-11	FOR APPROVAL
1286-3RD-MCC1-12	FOR APPROVAL
1286-3RD-MCC1-13	FOR APPROVAL
1286-3RD-MCC1-14	FOR APPROVAL
1286-3RD-MCC1-15	FOR APPROVAL

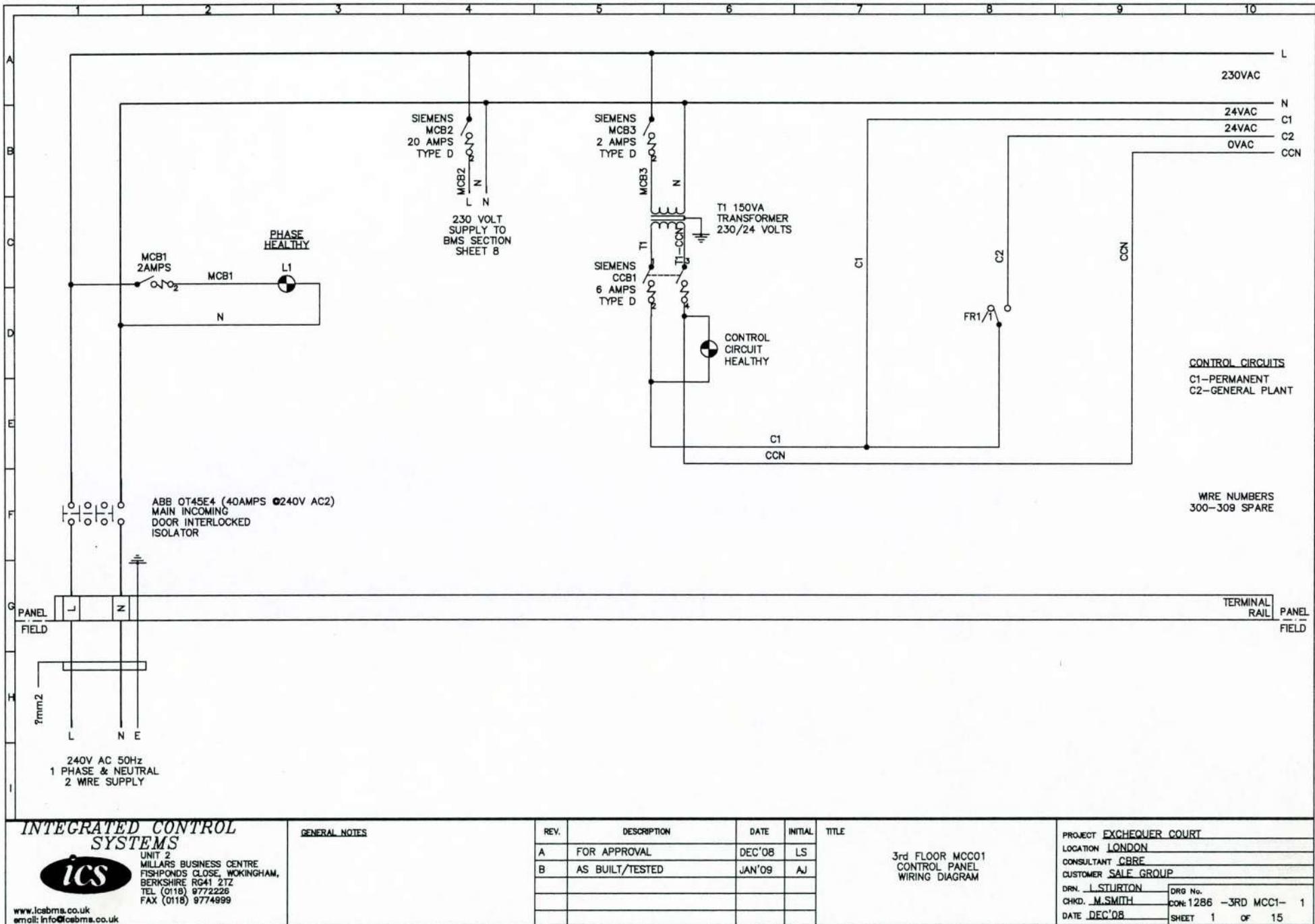


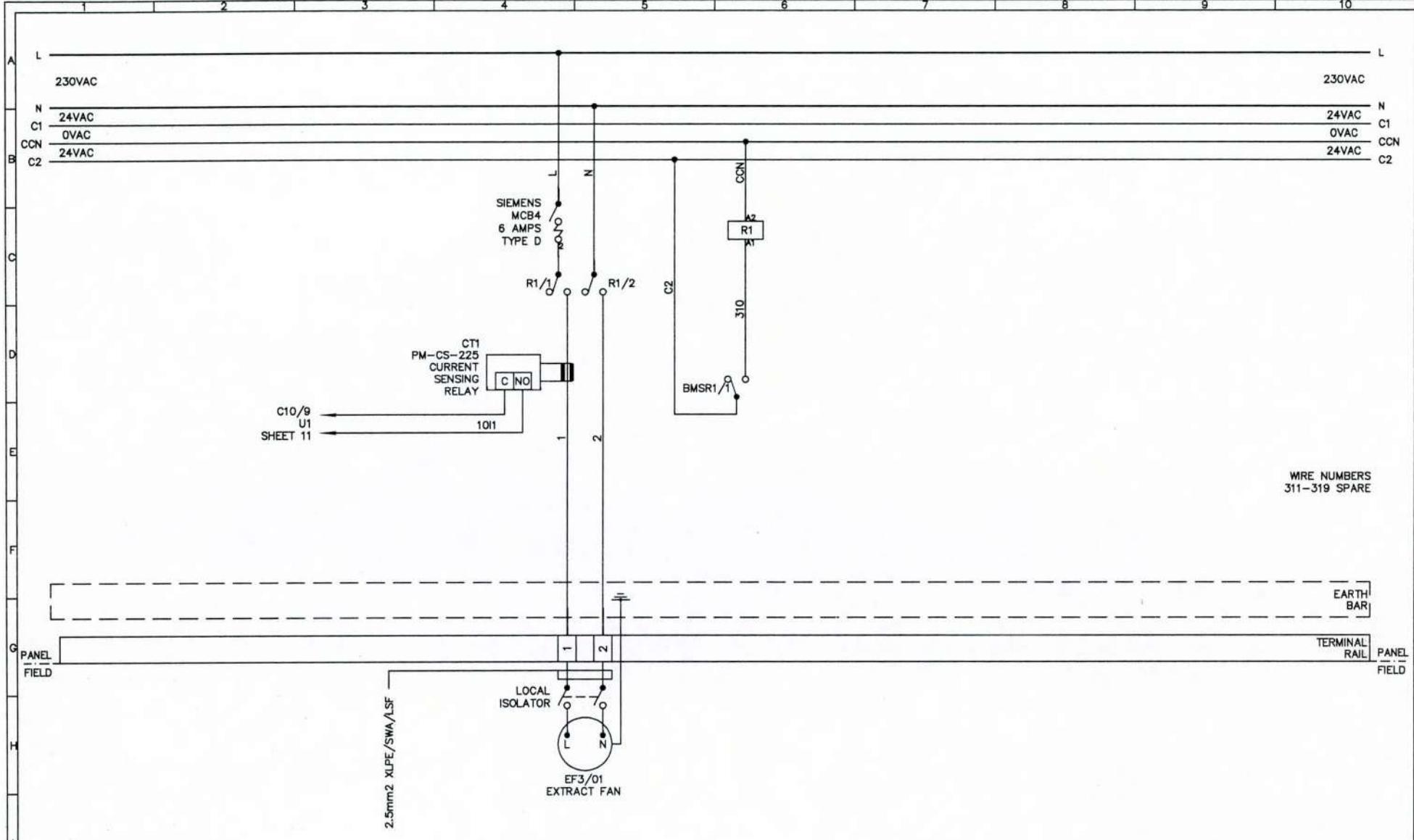
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Project EXCHEQUER COURT
Location LONDON
Consultant CBRE
Customer SALE GROUP
Issue B AS BUILT/TESTED

Drawing No.	Sheet Contents
1286-3RD-MCC1-00	AS BUILT/TESTED
1286-3RD-MCC1-01	ISOLATOR DETAILS, CIRCUIT BREAKER AMPAGE & NAME + TRANSFORMER VA AMENDED
1286-3RD-MCC1-02	TEXT ADDED
1286-3RD-MCC1-03	TEXT ADDED
1286-3RD-MCC1-04	TEXT ADDED
1286-3RD-MCC1-05	TEXT ADDED
1286-3RD-MCC1-06	TEXT ADDED
1286-3RD-MCC1-07	TEXT ADDED
1286-3RD-MCC1-08	CIRCUIT BREAKER AMPAGE + TRANSFORMER VA AMENDED
1286-3RD-MCC1-09	LON NETWORK ADDED
1286-3RD-MCC1-10	SCREENS REMOVED
1286-3RD-MCC1-11	AS BUILT/TESTED
1286-3RD-MCC1-12	AS BUILT/TESTED
1286-3RD-MCC1-13	AS BUILT/TESTED
1286-3RD-MCC1-14	AS BUILT/TESTED
1286-3RD-MCC1-15	AS BUILT/TESTED





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A	FOR APPROVAL	DEC'08	LS	
B	AS BUILT/TESTED	JAN'09	AJ	

3rd FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

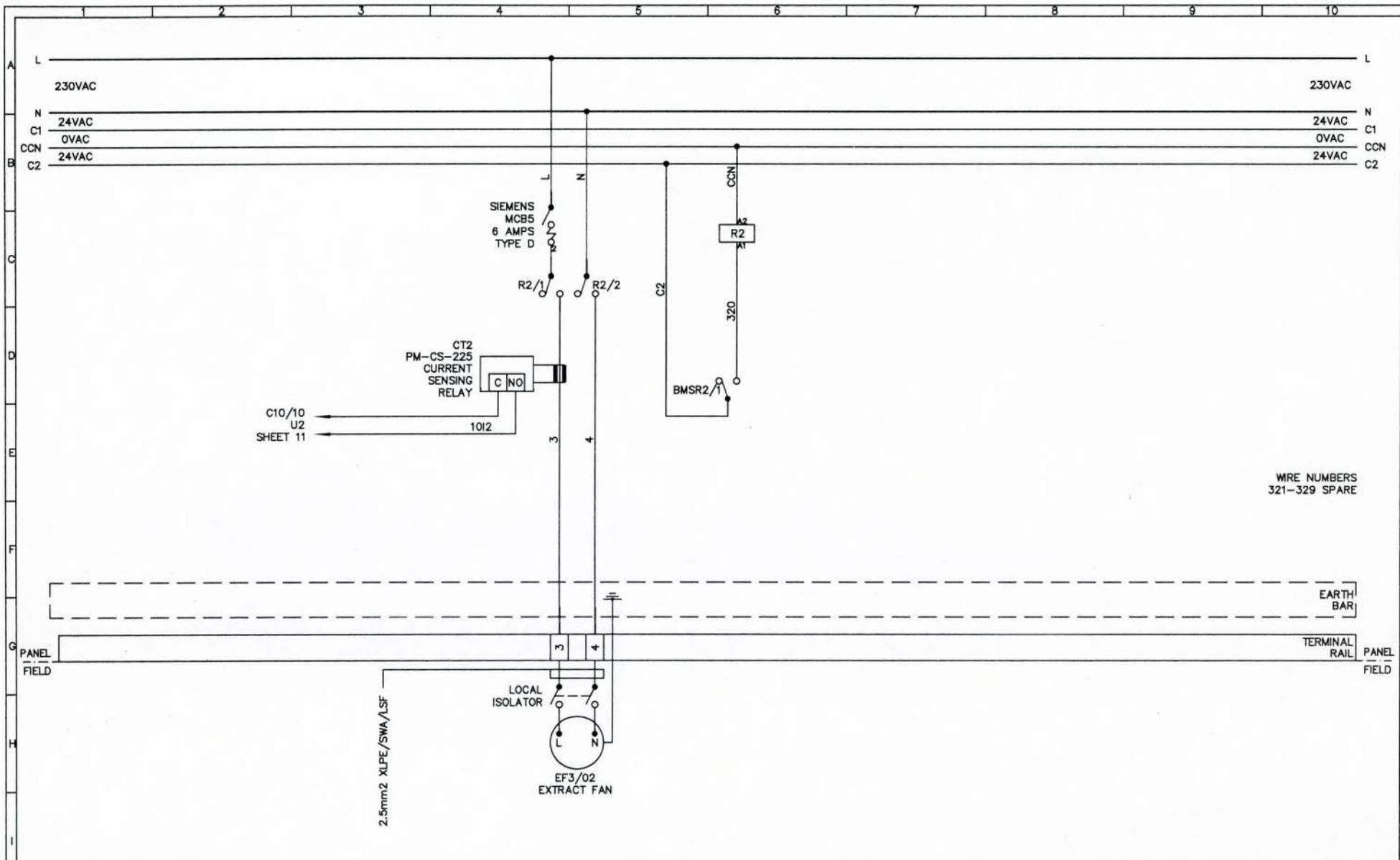
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CHND. M.SMITH CON:1286 -3RD MCC1-

DATE DEC'08 SHEET 2 OF 15



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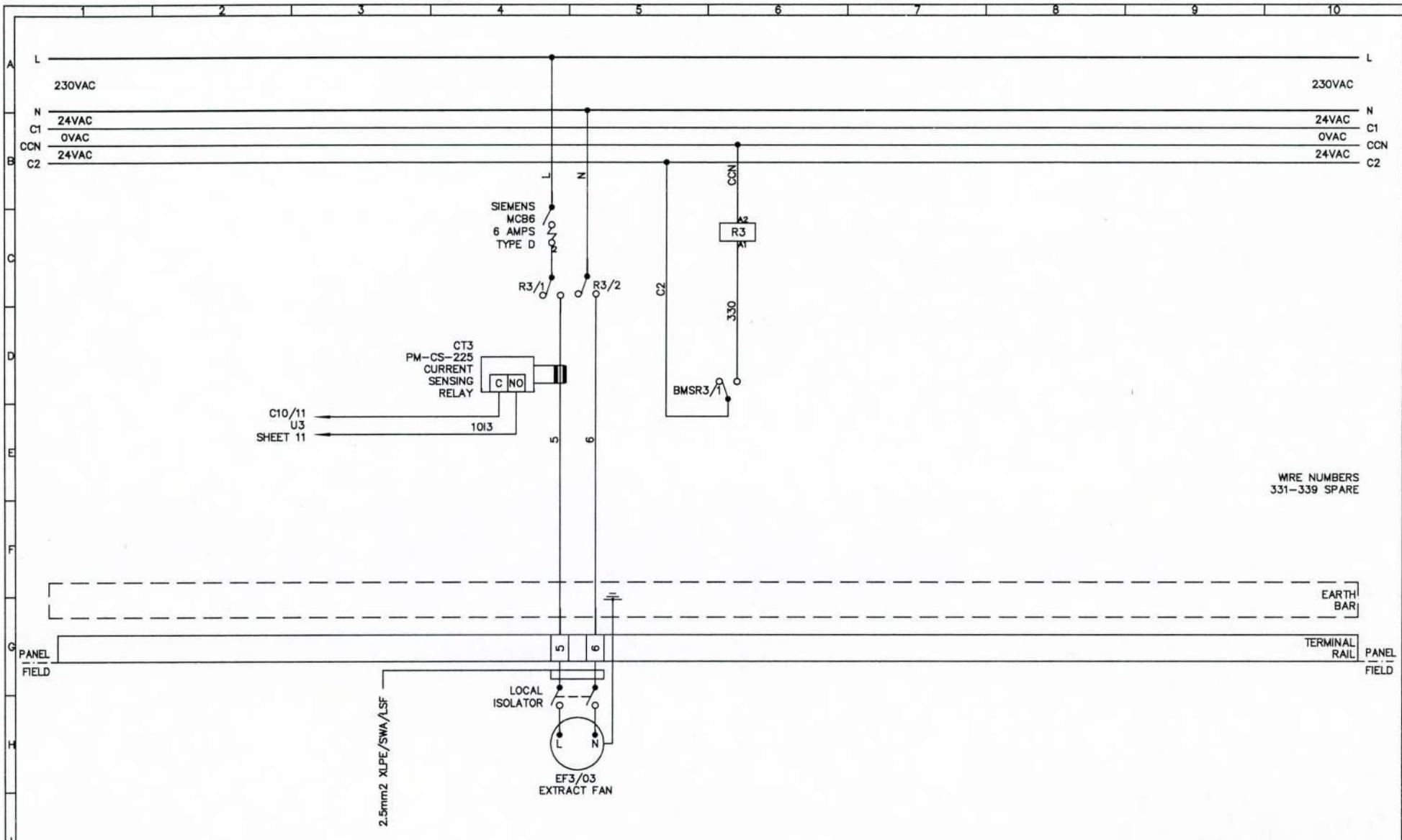
CHD. M. SMITH

CON 1286 - 3RD MCC1-

DATE DEC'08

3

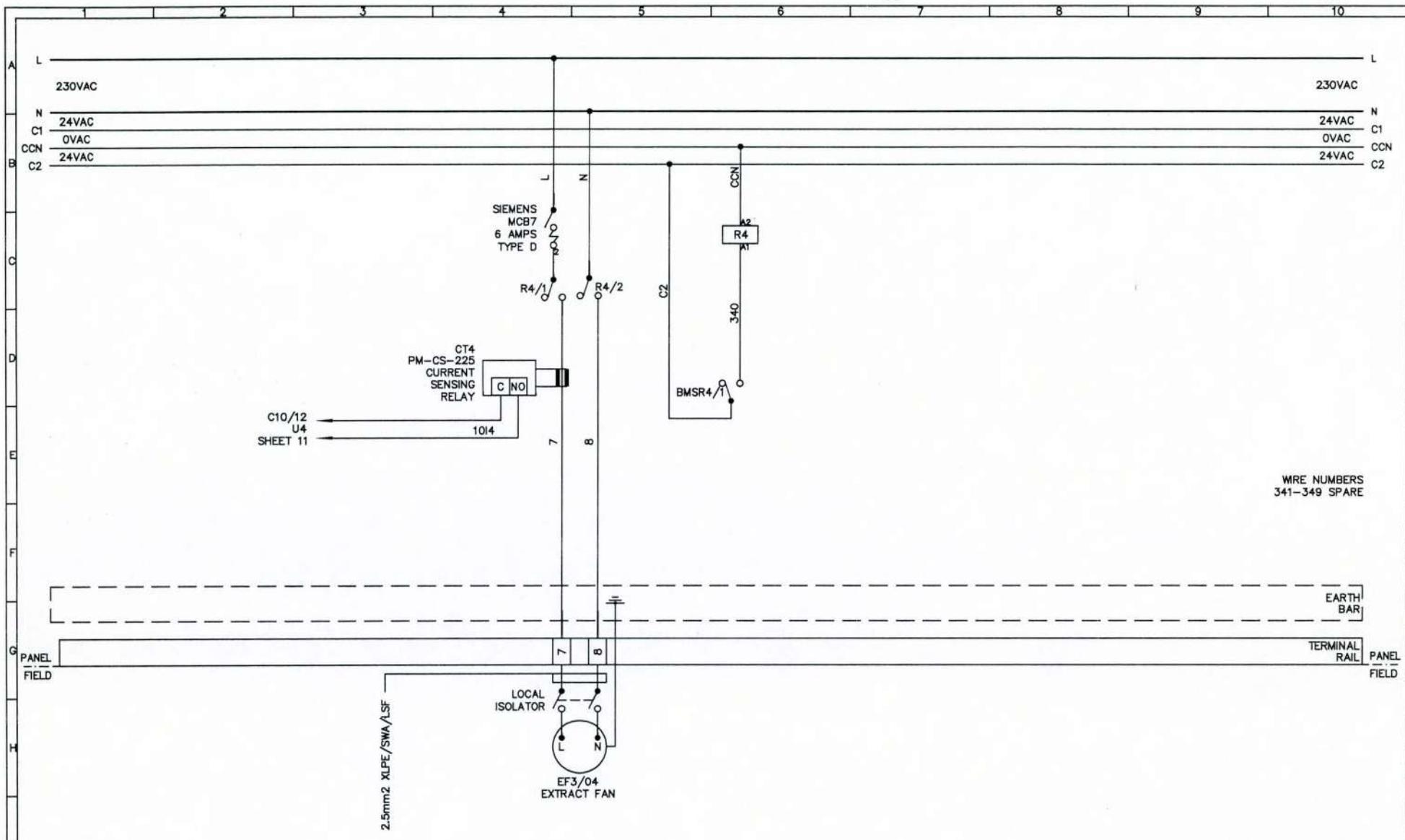
OF 15



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3rd FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

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CUSTOMER SALE GROUP

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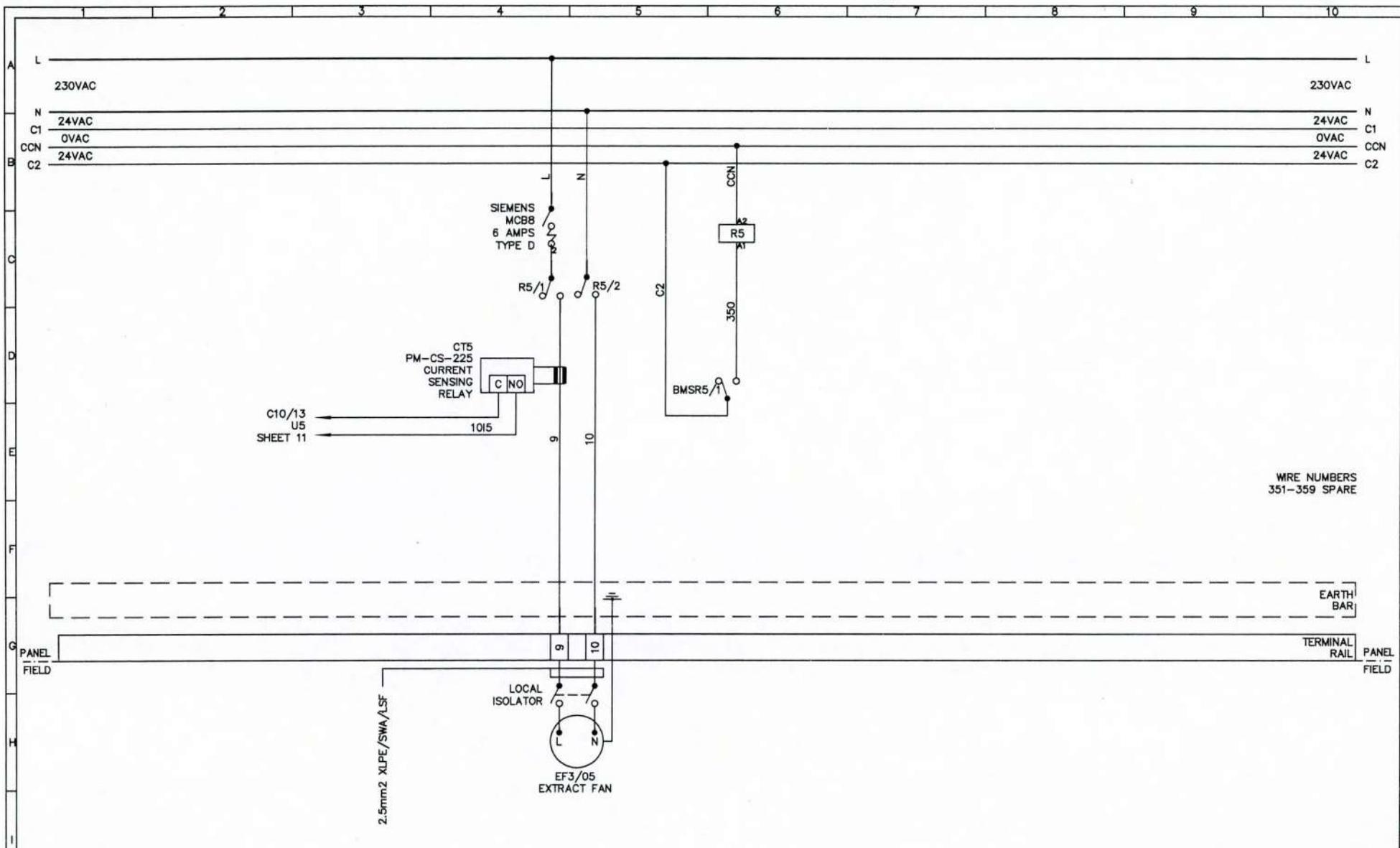
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CHD. M SMITH

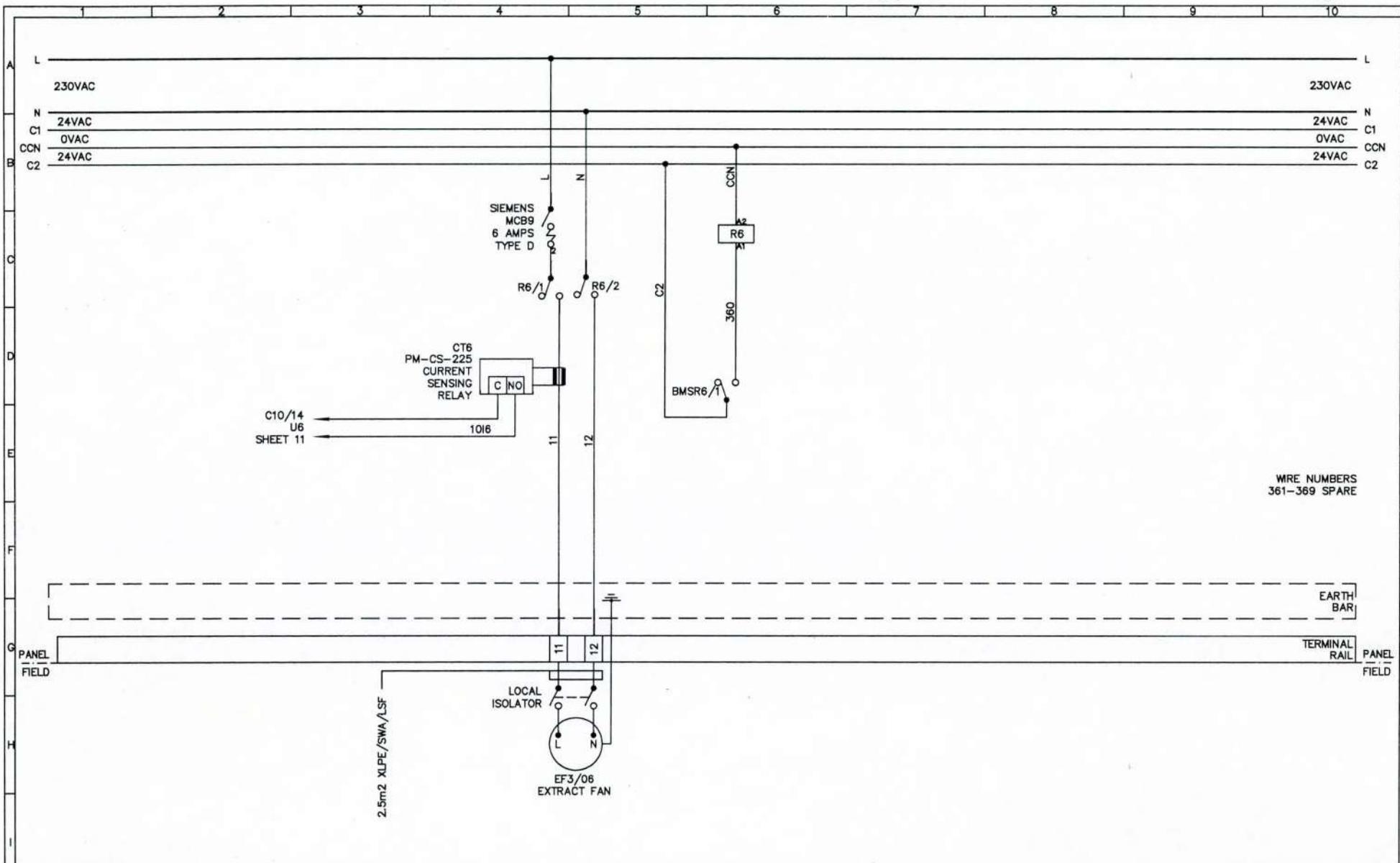
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DATE DEC'08

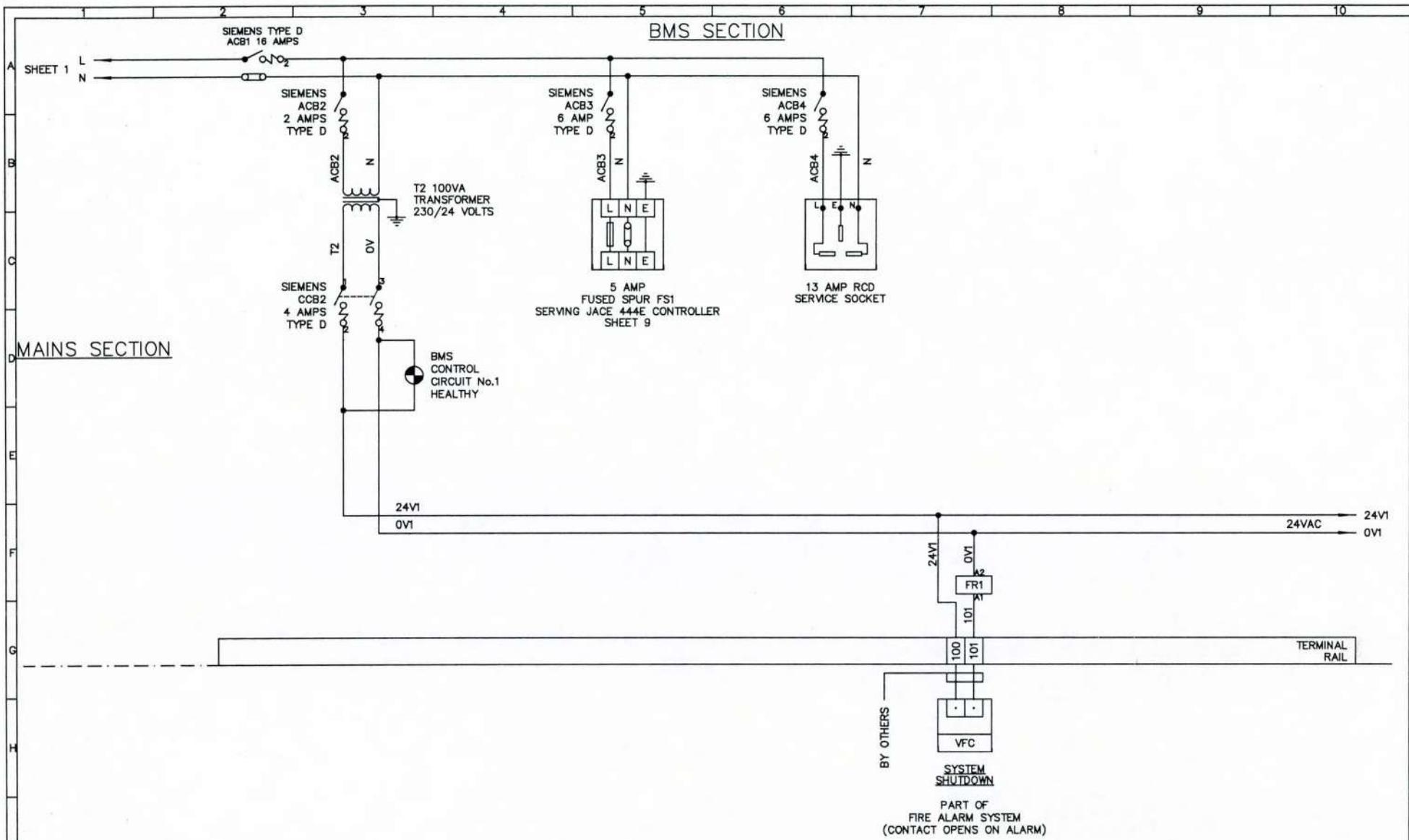
SHEET 5 OF 15



REV.	DESCRIPTION	DATE	INITIAL	TITLE	PROJECT EXCHEQUER COURT
A	FOR APPROVAL	DEC'08	LS	3rd FLOOR MCC01 CONTROL PANEL WIRING DIAGRAM	LOCATION LONDON
B	AS BUILT/TESTED	JAN'09	AJ		CONSULTANT CBRE
					CUSTOMER S&E GROUP
					DRN. L STURTON DRG No.
					CHKD. M SMITH Con 1285 - 3RD MCC1- 6
					DATE DEC'08 SHEET 6 OF 15



REV.	DESCRIPTION	DATE	INITIAL
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GENERAL NOTES

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B

AS BUILT/TESTED

JAN'09

AJ

3rd FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

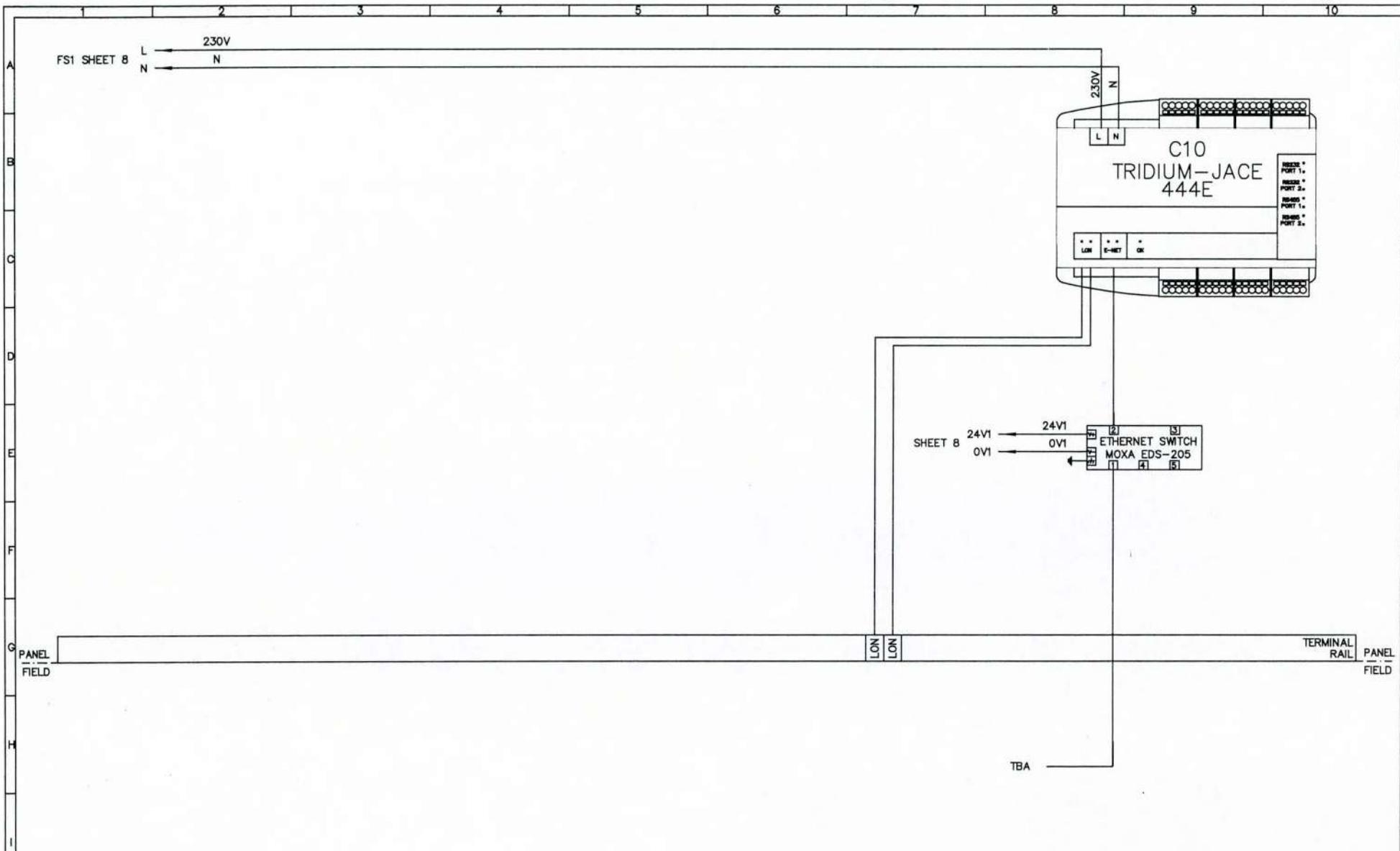
CUSTOMER SALE GROUP

DRN. L STURTON

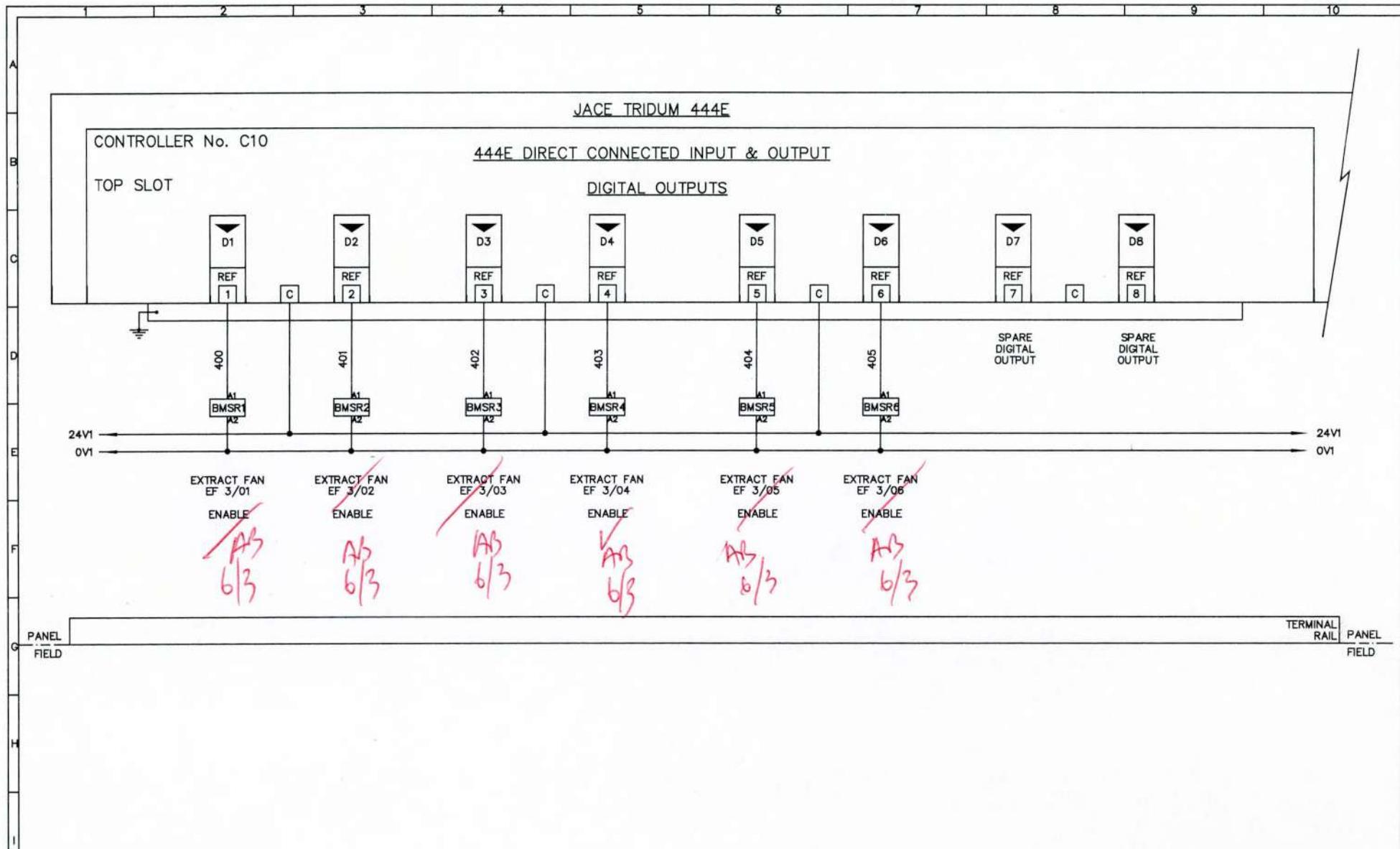
CHKD. M SMITH

DATE DEC'08

DRG No.
CON:1286 -3RD MCC1- 8
SHEET 8 OF 15



INTEGRATED CONTROL SYSTEMS		GENERAL NOTES	REV.	DESCRIPTION	DATE	INITIAL	TITLE 3rd FLOOR MCC01 CONTROL PANEL WIRING DIAGRAM	PROJECT EXCHEQUER COURT
UNIT 2 MILLARS BUSINESS CENTRE FISHPONDS CLOSE, WOKINGHAM, BERKSHIRE RG41 2TZ TEL (0118) 9772226 FAX (0118) 9774999 www.icsbms.co.uk email: info@icsbms.co.uk			A	FOR APPROVAL	DEC'08	LS		LOCATION LONDON
			B	AS BUILT/TESTED	JAN'09	AJ		CONSULTANT CBRE
								CUSTOMER SALE GROUP
								DRN. J. STURTON DRG No.
								CHKD. M. SMITH CON: 1286 -3RD MCC1- 9
								DATE DEC'08 SHEET 9 OF 15



INTEGRATED CONTROL SYSTEMS



UNIT 2
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BERKSHIRE RG41 2TZ
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email: info@icabms.co.uk

GENERAL NOTES

REV.	DESCRIPTION	DATE	INITIAL
A	FOR APPROVAL	DEC'08	LS
B	AS BUILT/TESTED	JAN'09	AJ

3rd FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER SAFC GROUP

DRN. L STURTON

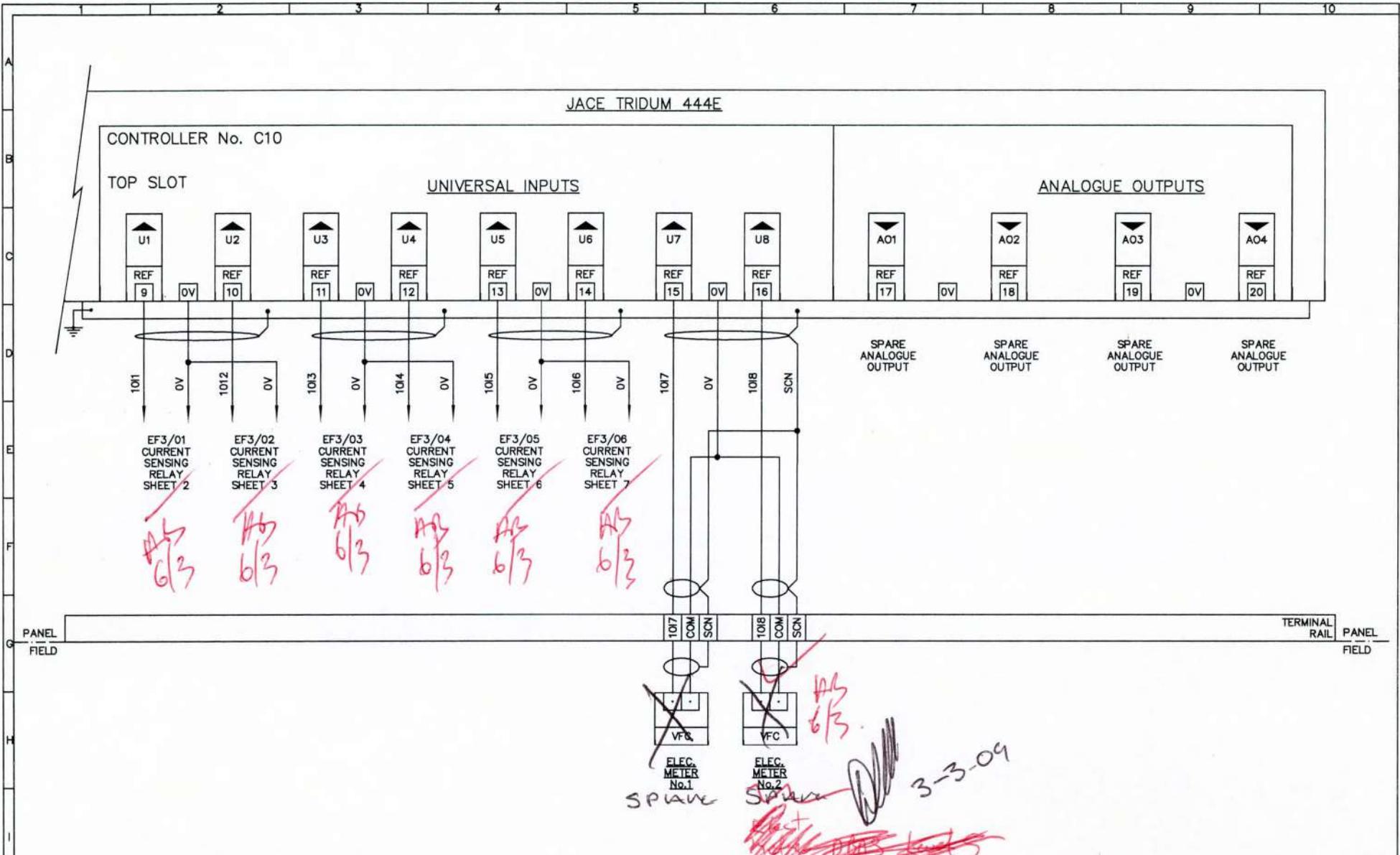
DRG No.

CHD. M SMITH

CON: 1286 - 3RD MCC1- 10

DATE DEC'08

SHEET 10 OF 15



INTEGRATED CONTROL SYSTEMS



UNIT 2
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GENERAL NOTES

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3rd FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER SALE GROUP

DR. J. STURTON

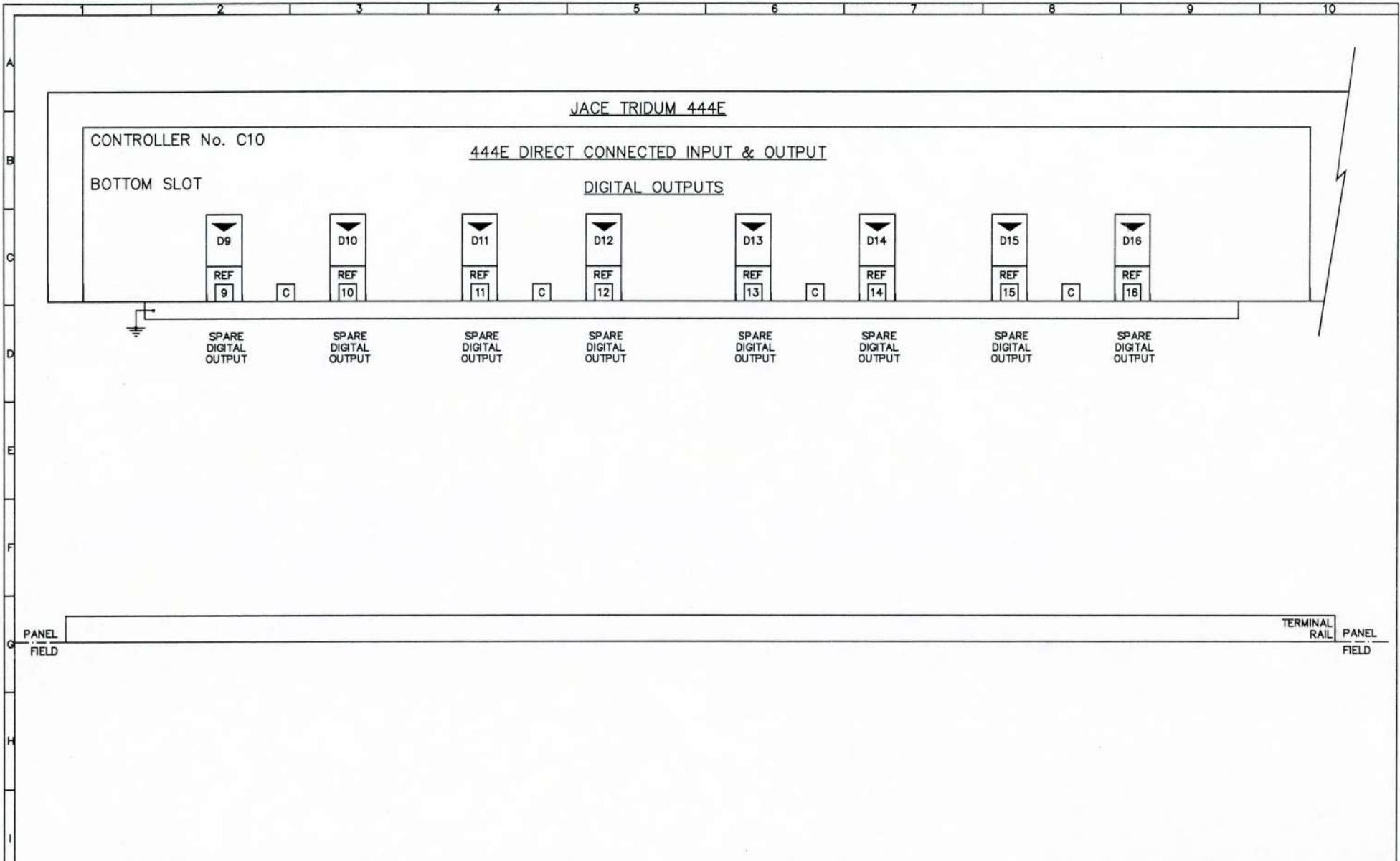
CHKD. M. SMITH

DATE DEC'08

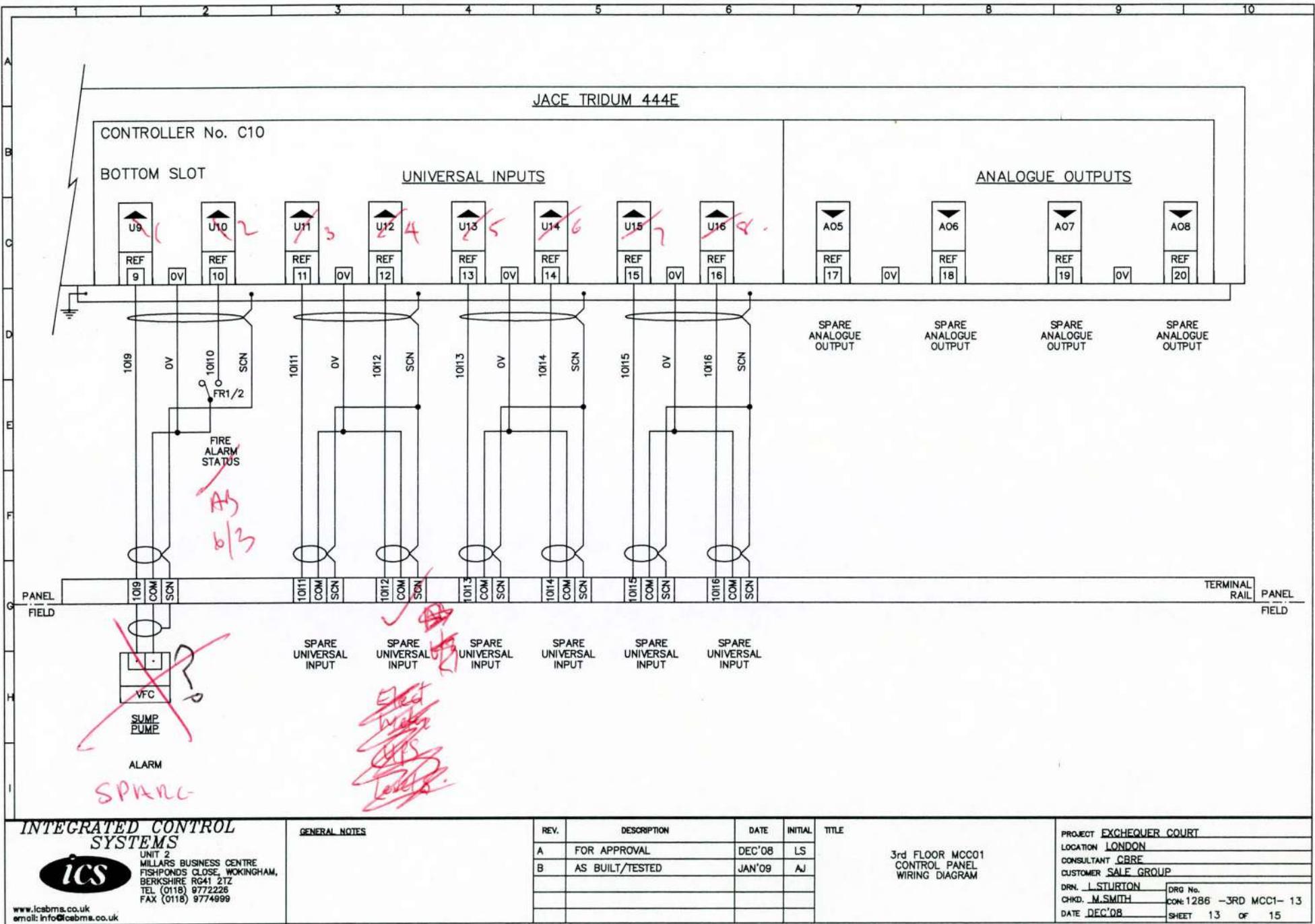
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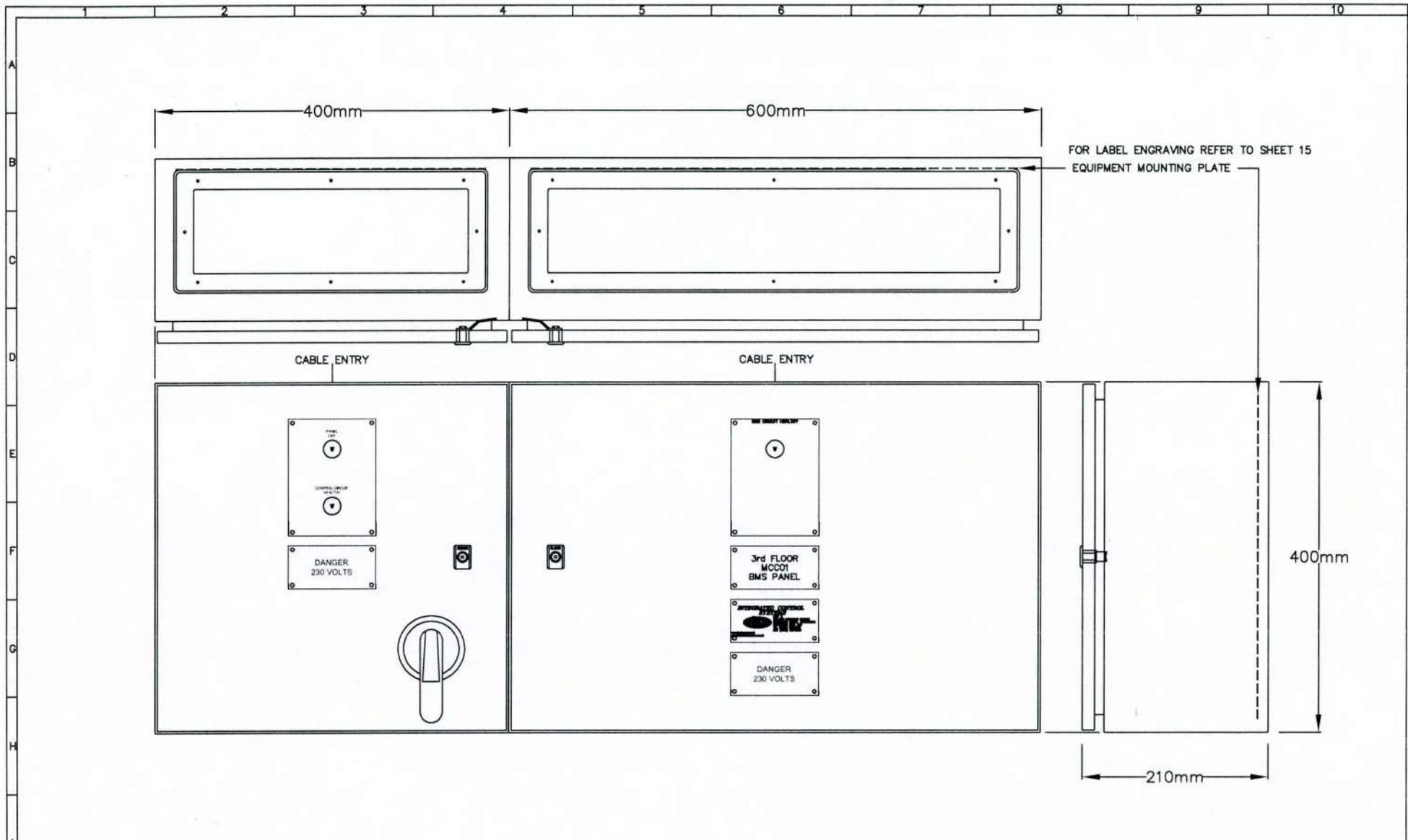
CON:1286 -3RD MCC1- 11

SHEET 11 OF 15



INTEGRATED CONTROL SYSTEMS		GENERAL NOTES	REV.	DESCRIPTION	DATE	INITIAL	TITLE	PROJECT EXCHEQUER COURT	
ICS	UNIT 2 MILLARS BUSINESS CENTRE FISHPONDS CLOSE, WOKINGHAM, BERKSHIRE RG41 2TZ TEL (0118) 9772226 FAX (0118) 9774999							LOCATION LONDON	
			A	FOR APPROVAL	DEC'08	LS	3rd FLOOR MCC01 CONTROL PANEL WIRING DIAGRAM	CONSULTANT CBRE	
			B	AS BUILT/TESTED	JAN'09	AJ		CUSTOMER SAFC GROUP	
								DRN. J STURTON	DRG No. CON:1286 -3RD MCC1- 12
								CHKD. M SMITH	DATE DEC'08
									SHEET 12 OF 15





SCALE 1 : 2

INTEGRATED CONTROL SYSTEMS



UNIT 2
MILLARS BUSINESS CENTRE
FISHPONDS CLOSE, WOKINGHAM,
BERKSHIRE RG41 2TZ
TEL (0118) 9772226
FAX (0118) 9774999
www.icsbms.co.uk
email: info@icsbms.co.uk

GENERAL NOTES : 500mm x 400mm x 210mm
ENCLOSURE DIMS : 470mm x 350mm
MOUNTING PLATE DIMS : PART No. : MAS0504021
IP RATING : 66
COLOUR : RAL 7035 GRAY

REV.	DESCRIPTION	DATE	INITIAL
A	FOR APPROVAL	DEC'08	LS
B	AS BUILT/TESTED	JAN'09	AJ

3rd FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER SAFC GROUP

DRN. J.L STURTON

CHKD. M.M SMITH

DATE DEC'08

DRG No.
CON:1286 -3RD MCC1- 14
SHEET 14 OF 15

Web Site – www.icsbms.co.uk

Email – info@icsbms.co.uk



CON:1286

DRAWING : 5th FLOOR MCC01
CONTROL PANEL

PROJECT : EXCHEQUER COURT

LOCATION : LONDON

CONSULTANT : CBRE

CUSTOMER : SALE GROUP

REVISION : B AS BUILT/TESTED



controlling
the FUTURE

Contract No. CON1286 5th FLOOR MCC01
Project EXCHEQUER COURT
Location LONDON
Consultant CBRE
Customer SALE GROUP
Issue B AS BUILT/TESTED

Drawing No.	Sheet Contents
1286-5TH-MCC1-00	COVER SHEET
1286-5TH-MCC1-i	INDEX SCHEDULE
1286-5TH-MCC1-ii	RELAY SCHEDULE
1286-5TH-MCC1-iii	ISSUE A
1286-5TH-MCC1-iv	ISSUE B
1286-5TH-MCC1-01	MAINS INCOMING
1286-5TH-MCC1-02	EXTRACT FAN EF5/01
1286-5TH-MCC1-03	EXTRACT FAN EF5/02
1286-5TH-MCC1-04	EXTRACT FAN EF5/03
1286-5TH-MCC1-05	EXTRACT FAN EF5/04
1286-5TH-MCC1-06	EXTRACT FAN EF5/05
1286-5TH-MCC1-07	EXTRACT FAN EF5/06
1286-5TH-MCC1-08	BMS INCOMING + FIRE ALARM RELAY
1286-5TH-MCC1-09	TRIDIUM JACE 444E CONTROLLER & ETHERNET CONNECTION
1286-5TH-MCC1-10	1-8 DIGITAL OUTPUTS
1286-5TH-MCC1-11	1-8 UNIVERSAL INPUTS & 4 ANALOGUE OUTPUTS
1286-5TH-MCC1-12	1-8 DIGITAL OUTPUTS
1286-5TH-MCC1-13	1-8 UNIVERSAL INPUTS & 4 ANALOGUE OUTPUTS
1286-5TH-MCC1-14	PANEL DIMENSIONS
1286-5TH-MCC1-15	LABEL DETAILS



controlling

the FUTURE

Contract No. CON1286 5th FLOOR MCC01

Project EXCHEQUER COURT

Location LONDON

Consultant CBRE

Customer SALE GROUP

Issue B AS BUILT/TESTED

Page 1

Contact Number
On Sheet Number

Relay No.	Relay Function	Coil	1st	2nd	3rd	4th	LOCATION
R1	EXTRACT FAN EF5/01 ENABLE	2	2	2			POWER
R2	EXTRACT FAN EF5/02 ENABLE	3	3	3			POWER
R3	EXTRACT FAN EF5/03 ENABLE	4	4	4			POWER
R4	EXTRACT FAN EF5/04 ENABLE	5	5	5			POWER
R5	EXTRACT FAN EF5/05 ENABLE	6	6	6			POWER
R6	EXTRACT FAN EF5/06 ENABLE	7	7	7			POWER
FR1	FIRE ALARM SYSTEM ACTIVATED	8	1	13			POWER
BMSR1	EXTRACT FAN EF5/01 ENABLE	10	2	SPARE			BMS
BMSR2	EXTRACT FAN EF5/02 ENABLE	10	3	SPARE			BMS
BMSR3	EXTRACT FAN EF5/03 ENABLE	10	4	SPARE			BMS
BMSR4	EXTRACT FAN EF5/04 ENABLE	10	5	SPARE			BMS
BMSR5	EXTRACT FAN EF5/05 ENABLE	10	6	SPARE			BMS
BMSR6	EXTRACT FAN EF5/06 ENABLE	10	7	SPARE			BMS



controlling

the FUTURE

Contract No. CON1286 5th FLOOR MCC01
Project EXCHEQUER COURT
Location LONDON
Consultant CBRE
Customer SALE GROUP
Issue A FOR APPROVAL

Drawing No.	Sheet Contents
1286-5TH-MCC1-00	FOR APPROVAL
1286-5TH-MCC1-01	FOR APPROVAL
1286-5TH-MCC1-02	FOR APPROVAL
1286-5TH-MCC1-03	FOR APPROVAL
1286-5TH-MCC1-04	FOR APPROVAL
1286-5TH-MCC1-05	FOR APPROVAL
1286-5TH-MCC1-06	FOR APPROVAL
1286-5TH-MCC1-07	FOR APPROVAL
1286-5TH-MCC1-08	FOR APPROVAL
1286-5TH-MCC1-09	FOR APPROVAL
1286-5TH-MCC1-10	FOR APPROVAL
1286-5TH-MCC1-11	FOR APPROVAL
1286-5TH-MCC1-12	FOR APPROVAL
1286-5TH-MCC1-13	FOR APPROVAL
1286-5TH-MCC1-14	FOR APPROVAL
1286-5TH-MCC1-15	FOR APPROVAL

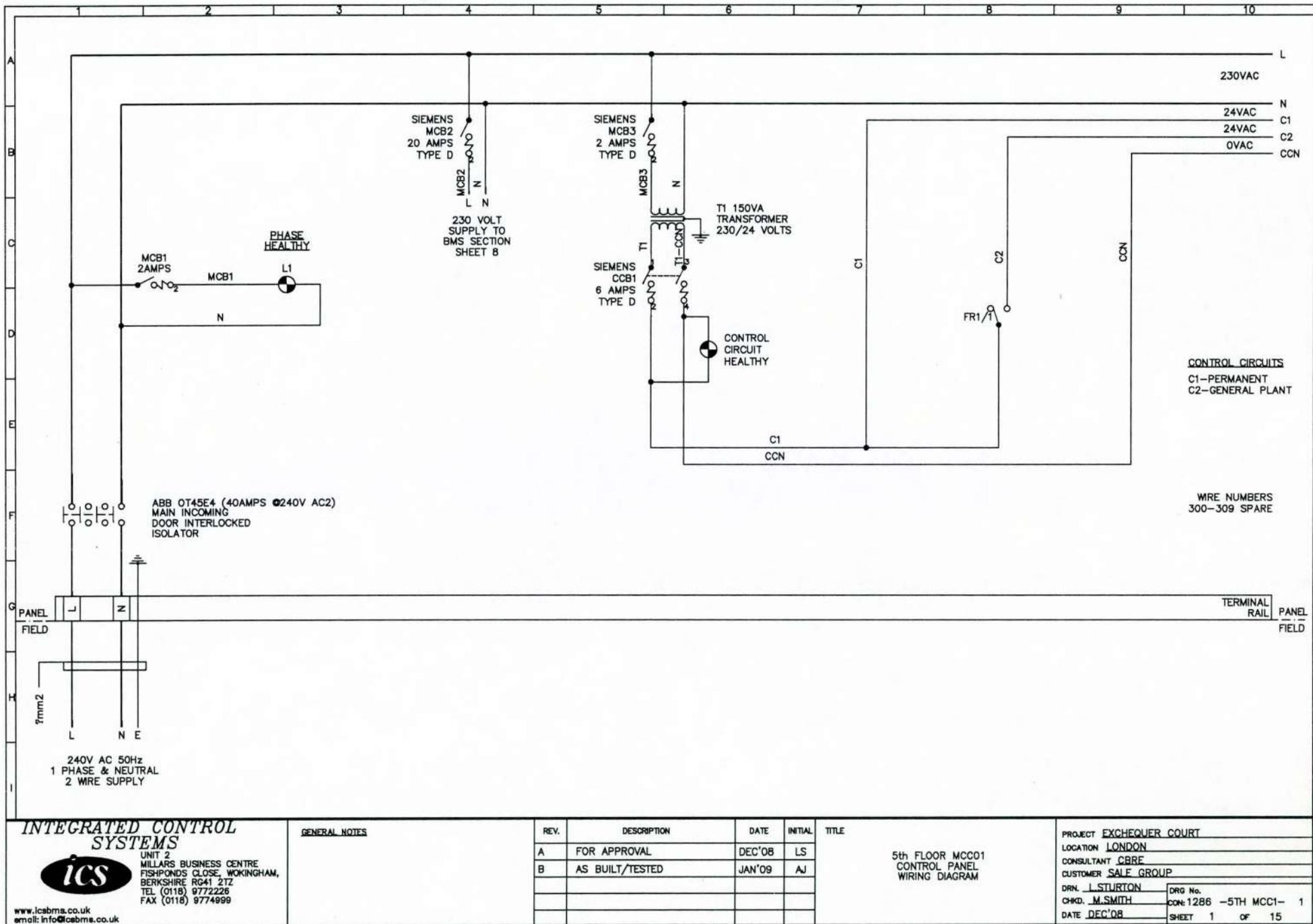


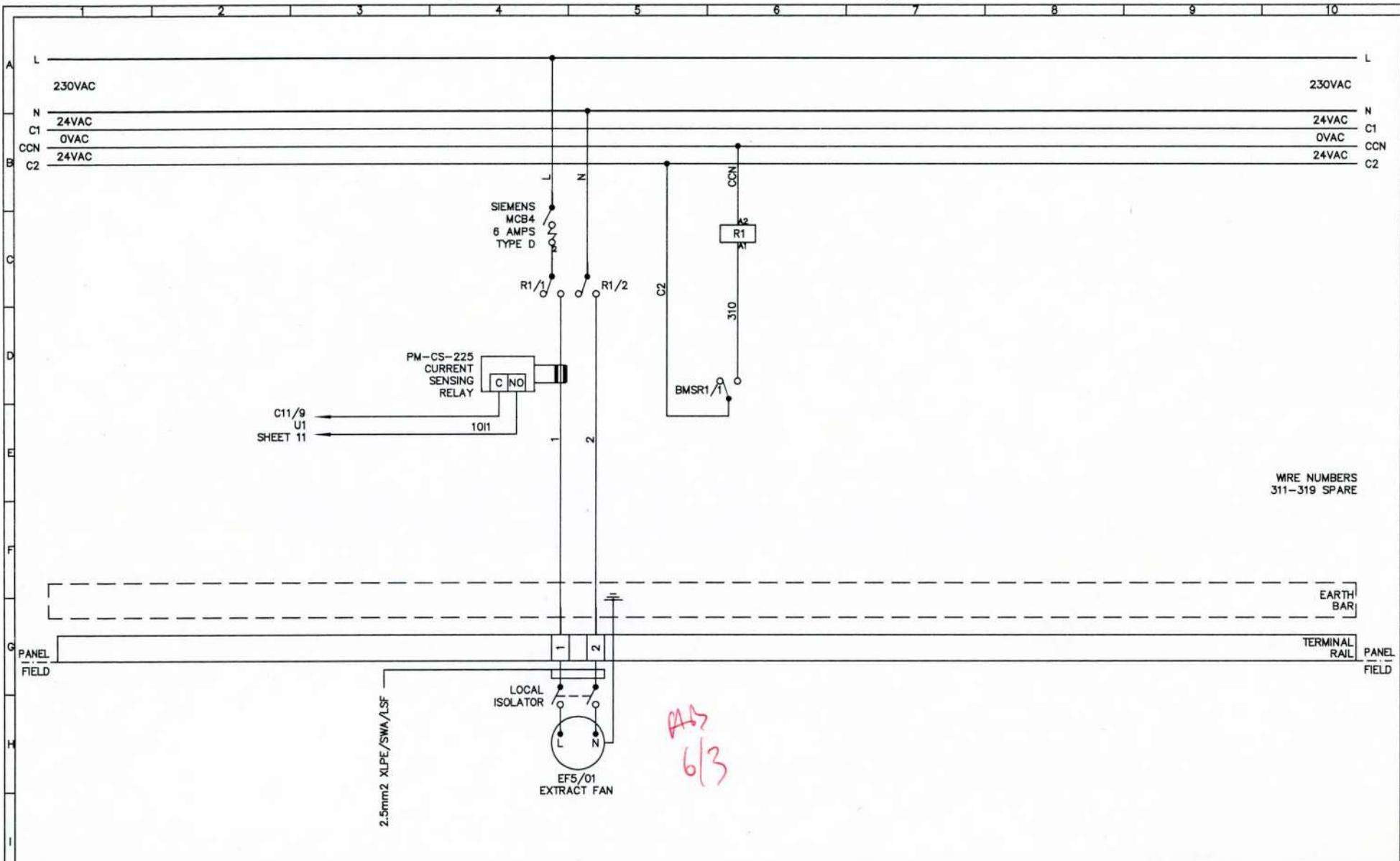
controlling

the FUTURE

Contract No. CON1286 5th FLOOR MCC01
Project EXCHEQUER COURT
Location LONDON
Consultant CBRE
Customer SALE GROUP
Issue B AS BUILT/TESTED

Drawing No.	Sheet Contents
1286-5TH-MCC1-00	AS BUILT/TESTED
1286-5TH-MCC1-01	ISOPLATOR DETAIL, CIRCUIT BREAKER AMPAGE & NAME + TRANSFORMER VA AMENDED
1286-5TH-MCC1-02	WIRE NUMBER AMENDED
1286-5TH-MCC1-03	WIRE NUMBER AMENDED
1286-5TH-MCC1-04	WIRE NUMBER AMENDED
1286-5TH-MCC1-05	WIRE NUMBER AMENDED
1286-5TH-MCC1-06	WIRE NUMBER AMENDED
1286-5TH-MCC1-07	WIRE NUMBER AMENDED
1286-5TH-MCC1-08	CIRCUIT BREAKER AMPAGE + TRANSFORMER VA AMENDED
1286-5TH-MCC1-09	LON NETWORK ADDED
1286-5TH-MCC1-10	SCREENS REMOVED
1286-5TH-MCC1-11	WIRE NUMBERS AMENDED
1286-5TH-MCC1-12	AS BUILT/TESTED
1286-5TH-MCC1-13	AS BUILT/TESTED
1286-5TH-MCC1-14	AS BUILT/TESTED
1286-5TH-MCC1-15	AS BUILT/TESTED





INTEGRATED CONTROL SYSTEMS



UNIT 2
MILLARS BUSINESS CENTRE
FISHPONDS CLOSE, WOKINGHAM,
BERKSHIRE RG41 2TZ
TEL (0118) 9772226
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email: info@icsbms.co.uk

GENERAL NOTES

REV.	DESCRIPTION	DATE	INITIAL
A	FOR APPROVAL	DEC'08	LS
B	AS BUILT/TESTED	JAN'09	AJ

TITLE

5th FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

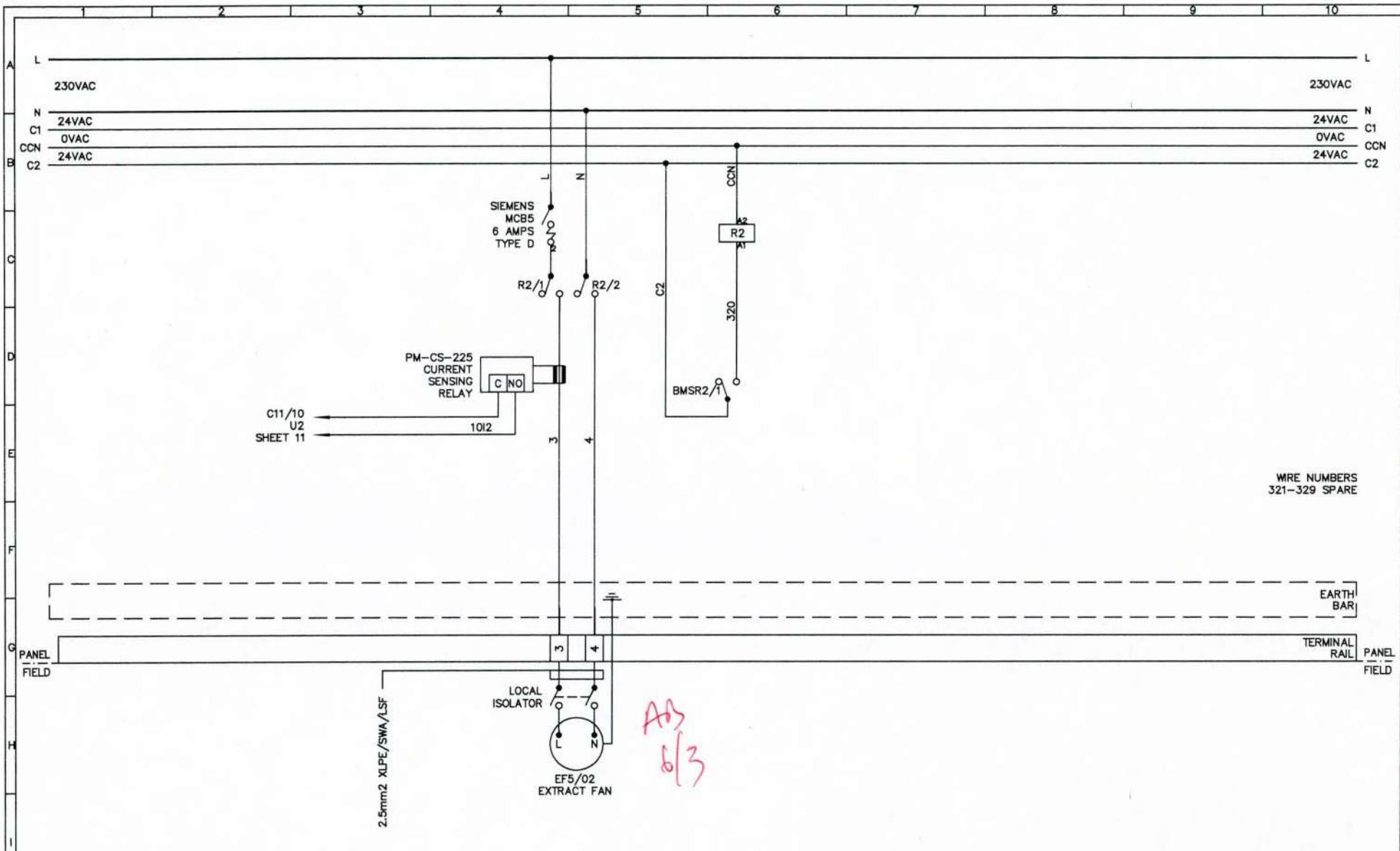
CUSTOMER SAFC GROUP

DRN. J.L-STURTON

CHKD. M.MSMITH

DATE DEC'08

DRG No.
CON:1286 -5TH MCC1-
SHEET 2 OF 15



INTEGRATED CONTROL SYSTEMS



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GENERAL NOTES

REV.

DESCRIPTION

DATE

INITIAL

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A

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LS

B

AS BUILT/TESTED

JAN'09

AJ

5th FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER SAFC GROUP

DRN. J. STURTON

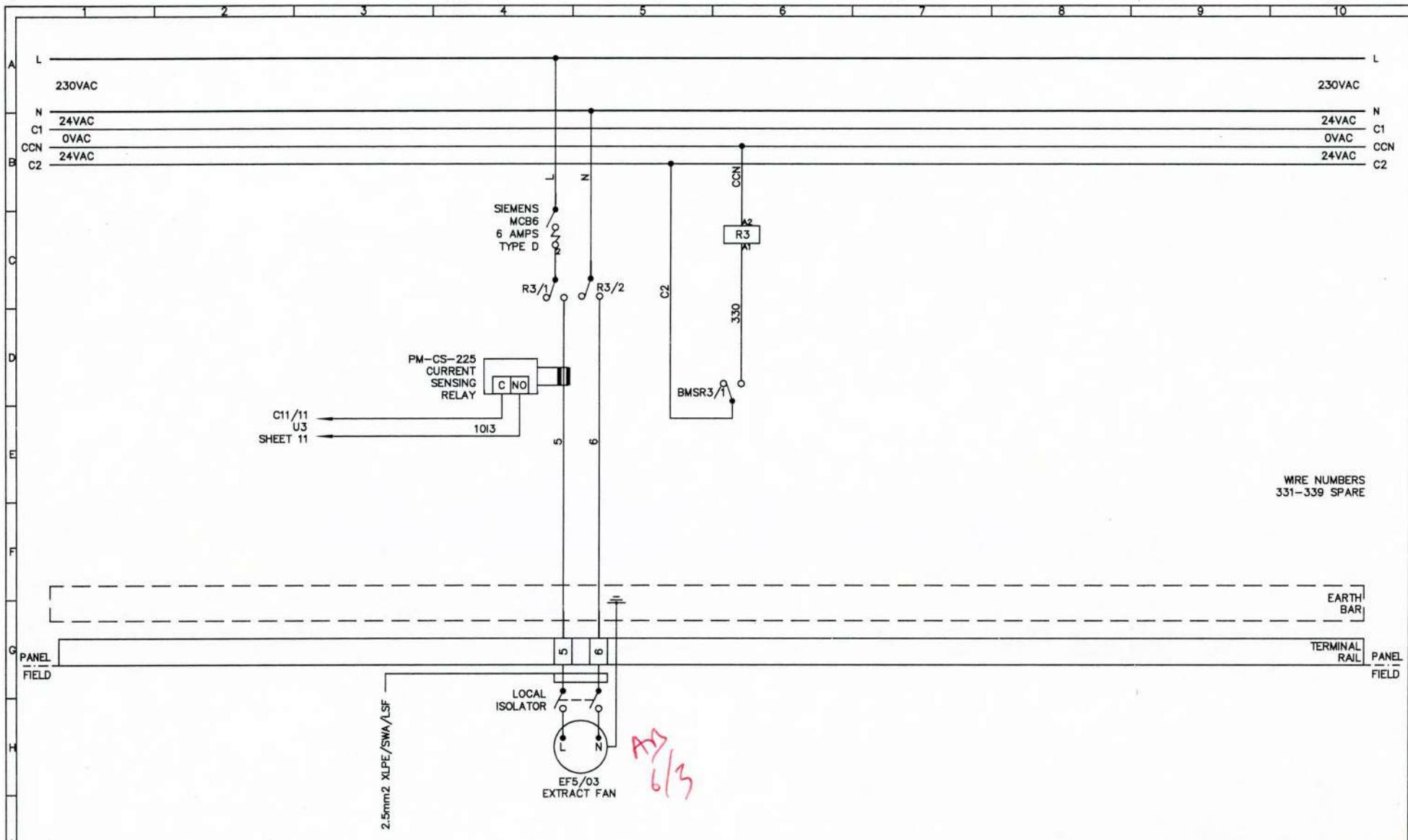
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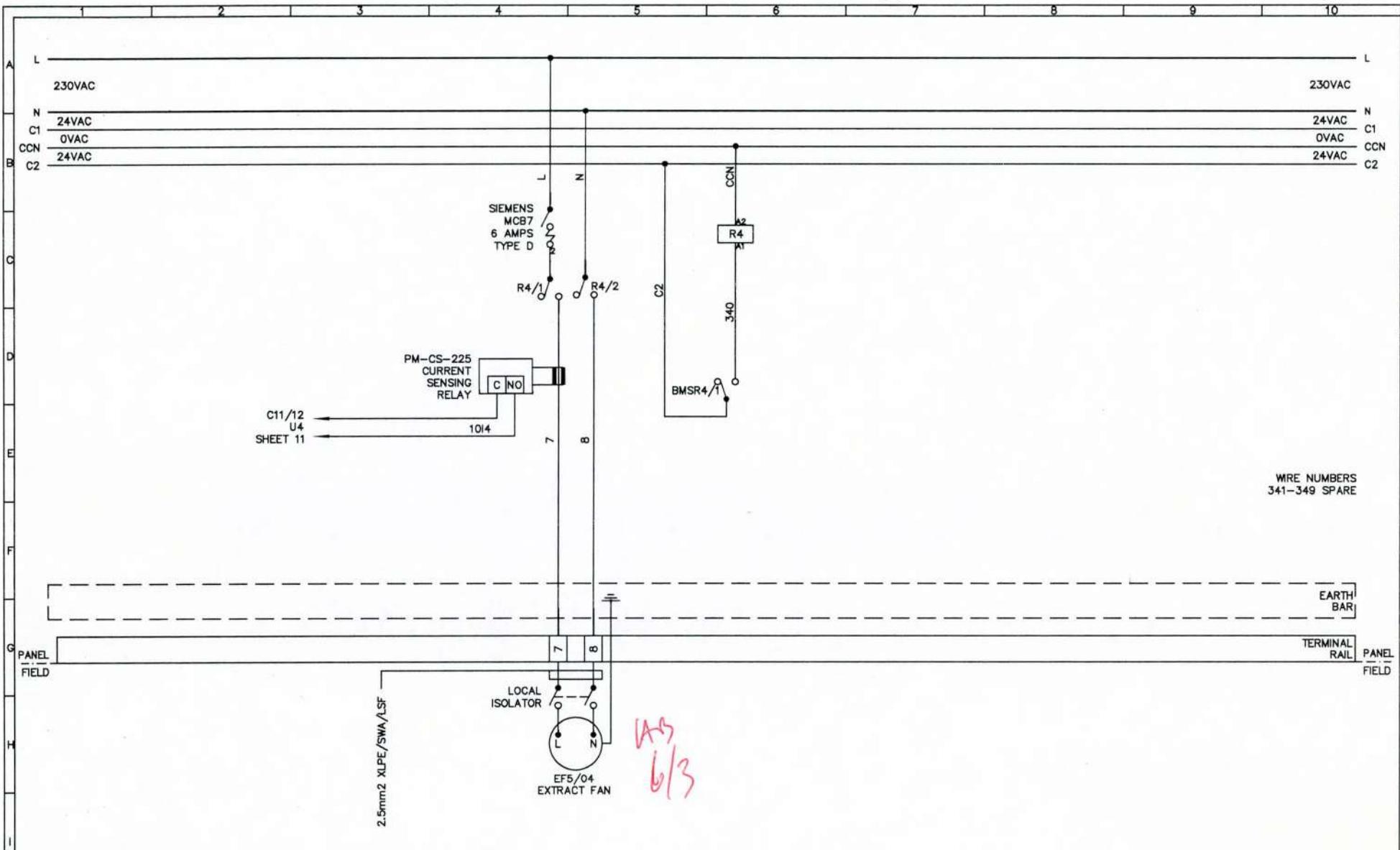
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DATE DEC'08

SHEET 3 OF 15



REV.	DESCRIPTION	DATE	INITIAL	TITLE	PROJECT	EXCHEQUER COURT
A	FOR APPROVAL	DEC'08	LS	5th FLOOR MCC01 CONTROL PANEL WIRING DIAGRAM	LOCATION	LONDON
B	AS BUILT/TESTED	JAN'09	AJ		CONSULTANT	CBRE
					CUSTOMER	SALE GROUP
					DRN.	L STURTON
					DRG No.	
					CHD.	M SMITH
					CON	1286 -5TH MCC1- 4
					DATE	DEC'08
					SHEET	4 OF 15



INTEGRATED CONTROL SYSTEMS



UNIT 2
MILLARS BUSINESS CENTRE
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BERKSHIRE RG41 2T2
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GENERAL NOTES

REV.	DESCRIPTION	DATE	INITIAL
A	FOR APPROVAL	DEC'08	LS
B	AS BUILT/TESTED	JAN'09	AJ

5th FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER S&E GROUP

DRN. J STURTON

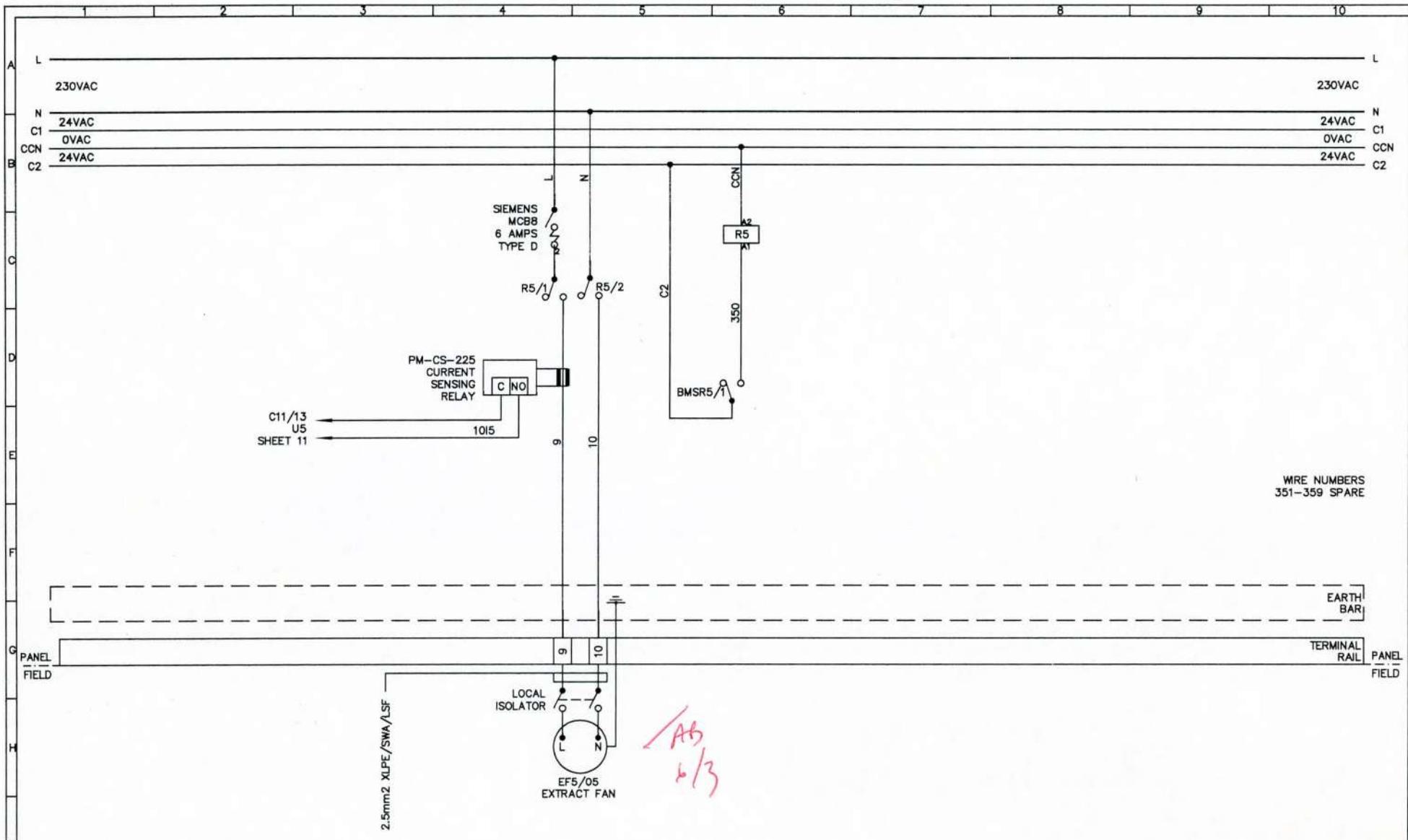
CHKD. M SMITH

DATE DEC'08

DRG No.

CON:1286 -5TH MCC1-

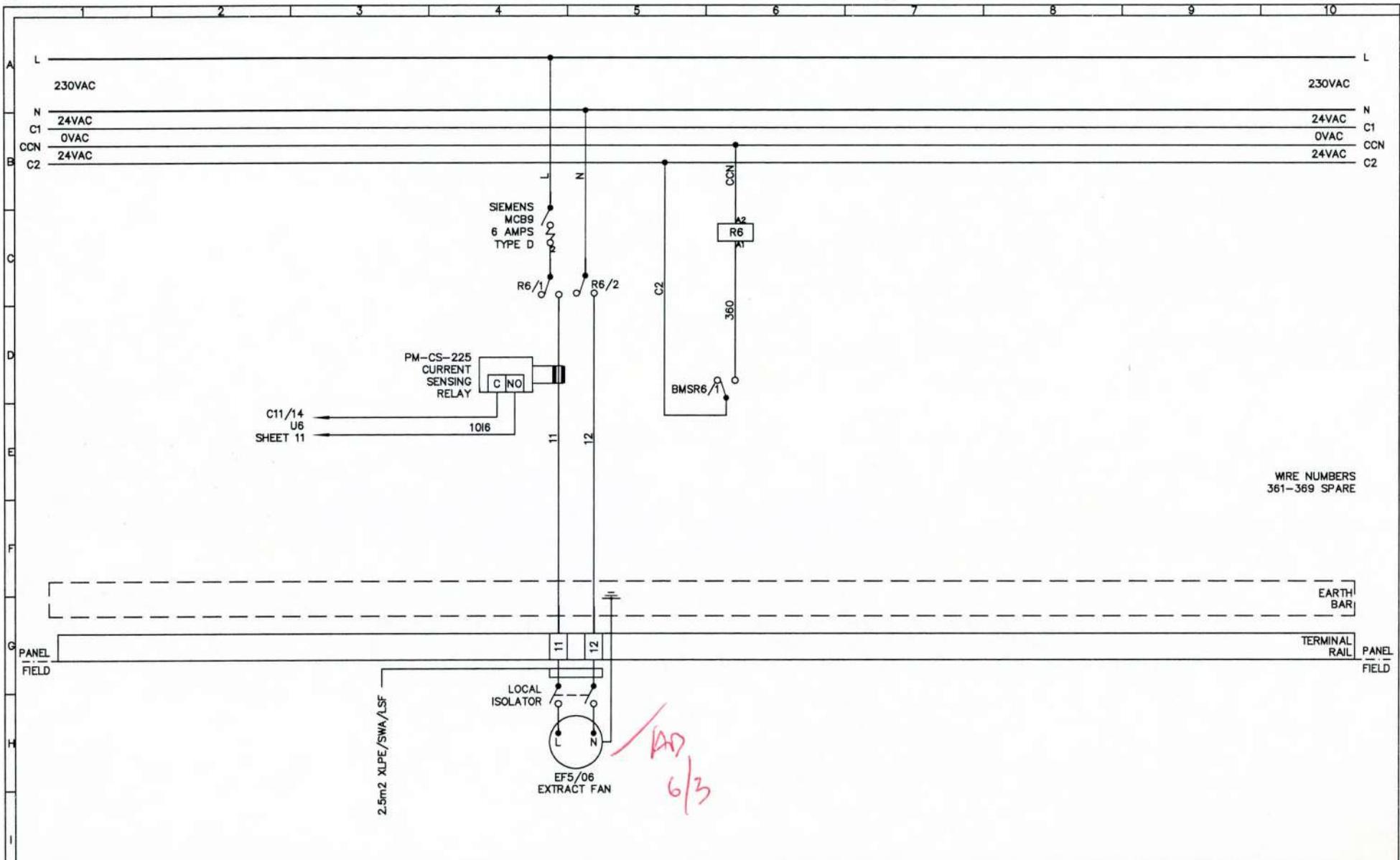
SHEET 5 OF 15



INTEGRATED CONTROL
SYSTEMS



UNIT 2
MILLARS BUSINESS CENTRE
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TITLE

5th FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER SAFC GROUP

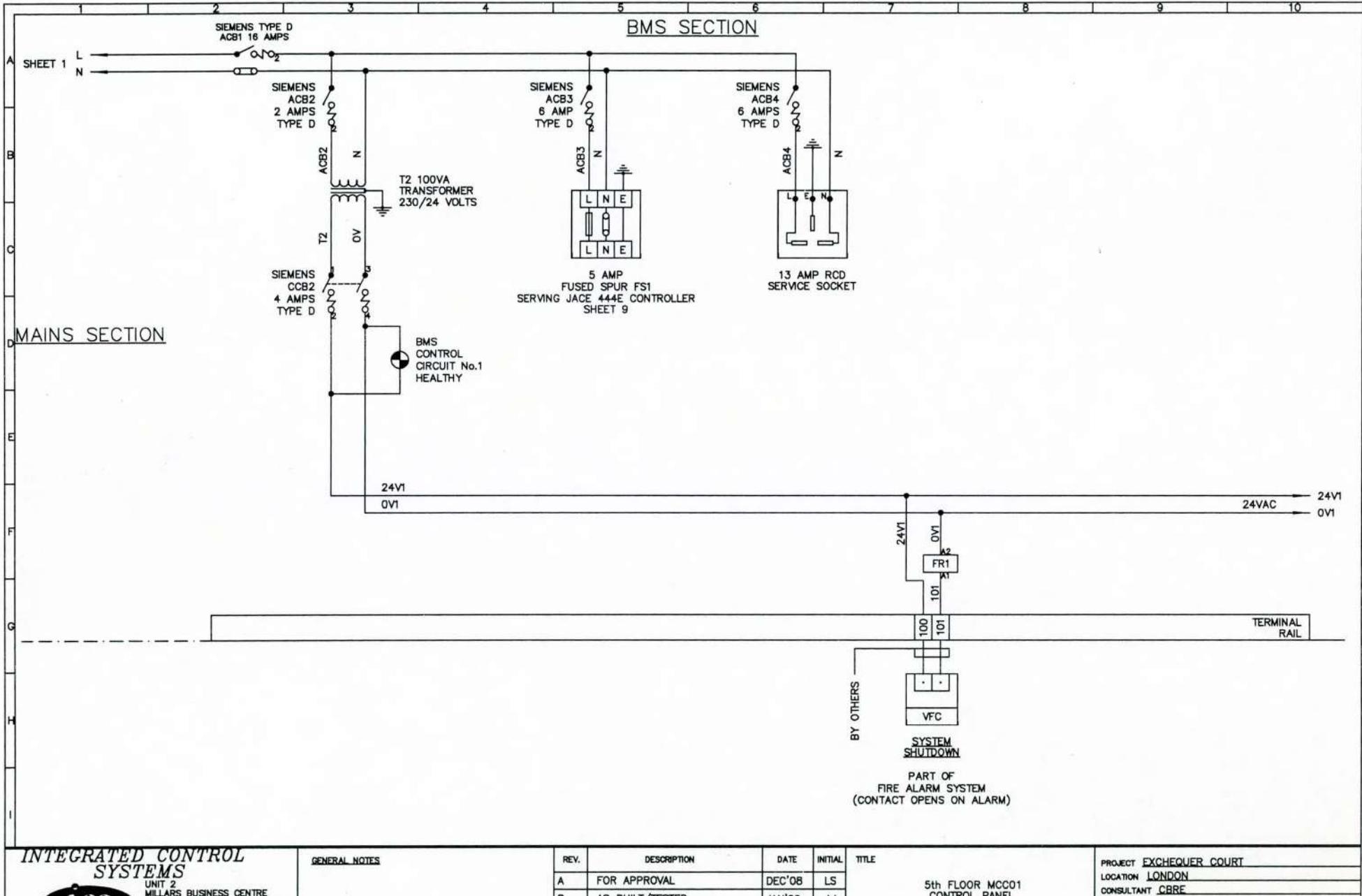
DRN. J.L STURTON

CHKD. M.M SMITH

DATE DEC'08

DRG No.
CON:1286 -5TH MCC1- 7

SHEET 7 OF 15

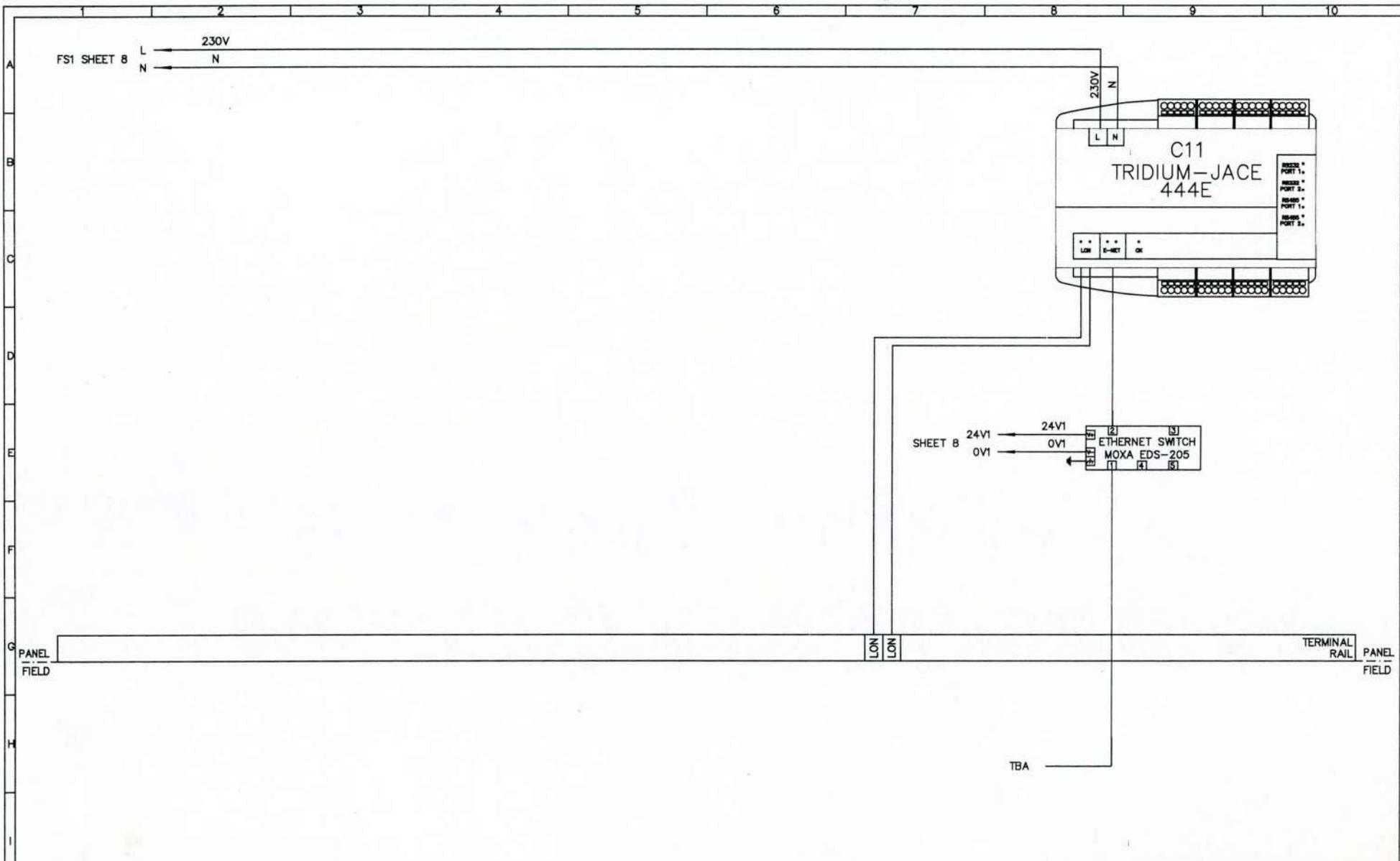


INTEGRATED CONTROL SYSTEMS



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GENERAL NOTES

REV.	DESCRIPTION	DATE	INITIAL
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B	AS BUILT/TESTED	JAN'09	AJ

5th FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER S&L GROUP

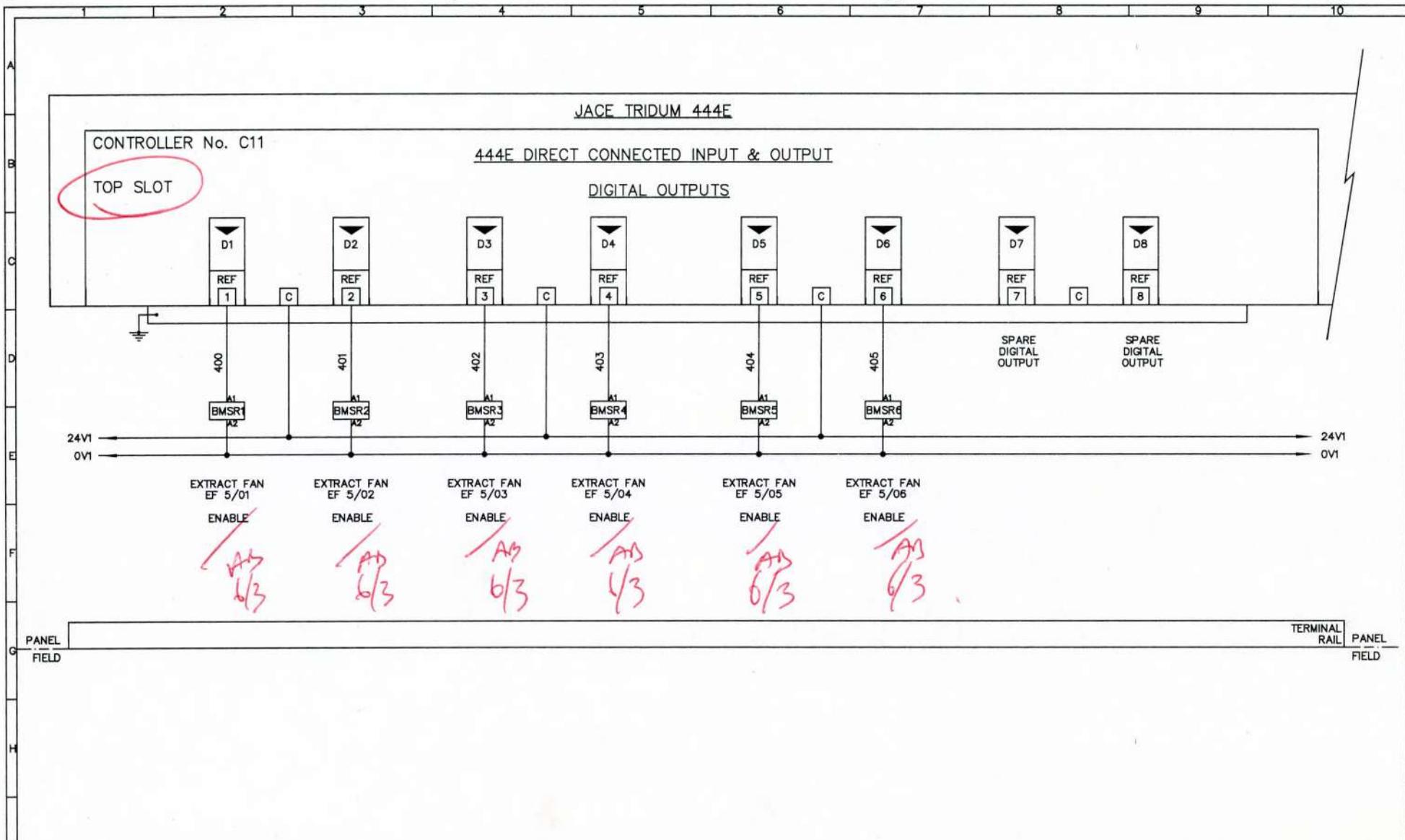
DRN. J.L.STURTON

CHKD. M.SMITH

DATE DEC'08

DRG No.
CON:1286 -5TH MCC1- 9

SHEET 9 OF 15



INTEGRATED CONTROL SYSTEMS



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BERKSHIRE RG41 2TZ
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GENERAL NOTES

REV.	DESCRIPTION	DATE	INITIAL	TITLE
A	FOR APPROVAL	DEC'08	LS	
B	AS BUILT/TESTED	JAN'09	AJ	

5th FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER SAFC GROUP

DRN. L-STURTON

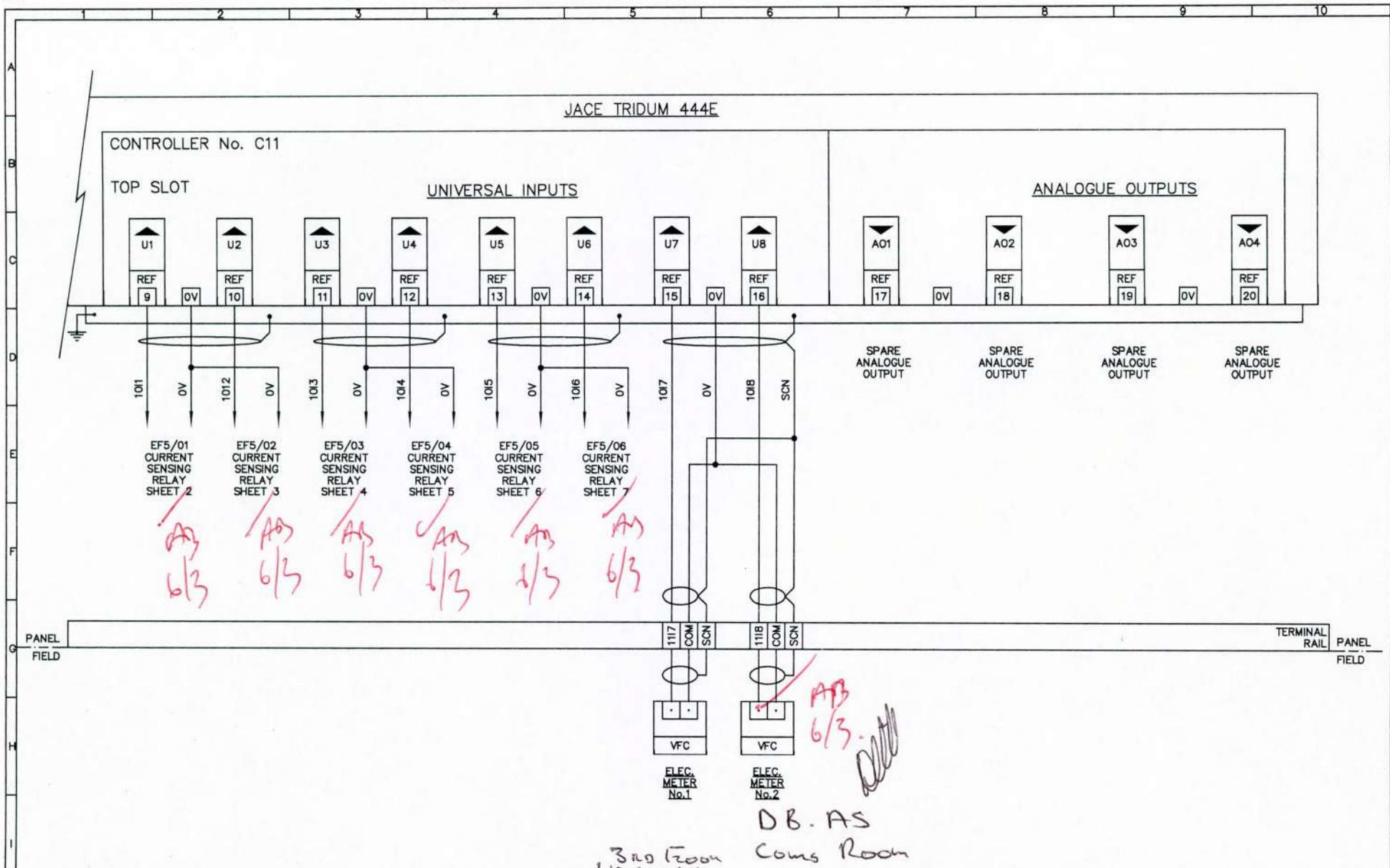
CHKD. M.SMITH

DATE DEC'08

DRG No.

CON:1286 -5TH MCC1- 10

SHEET 10 OF 15



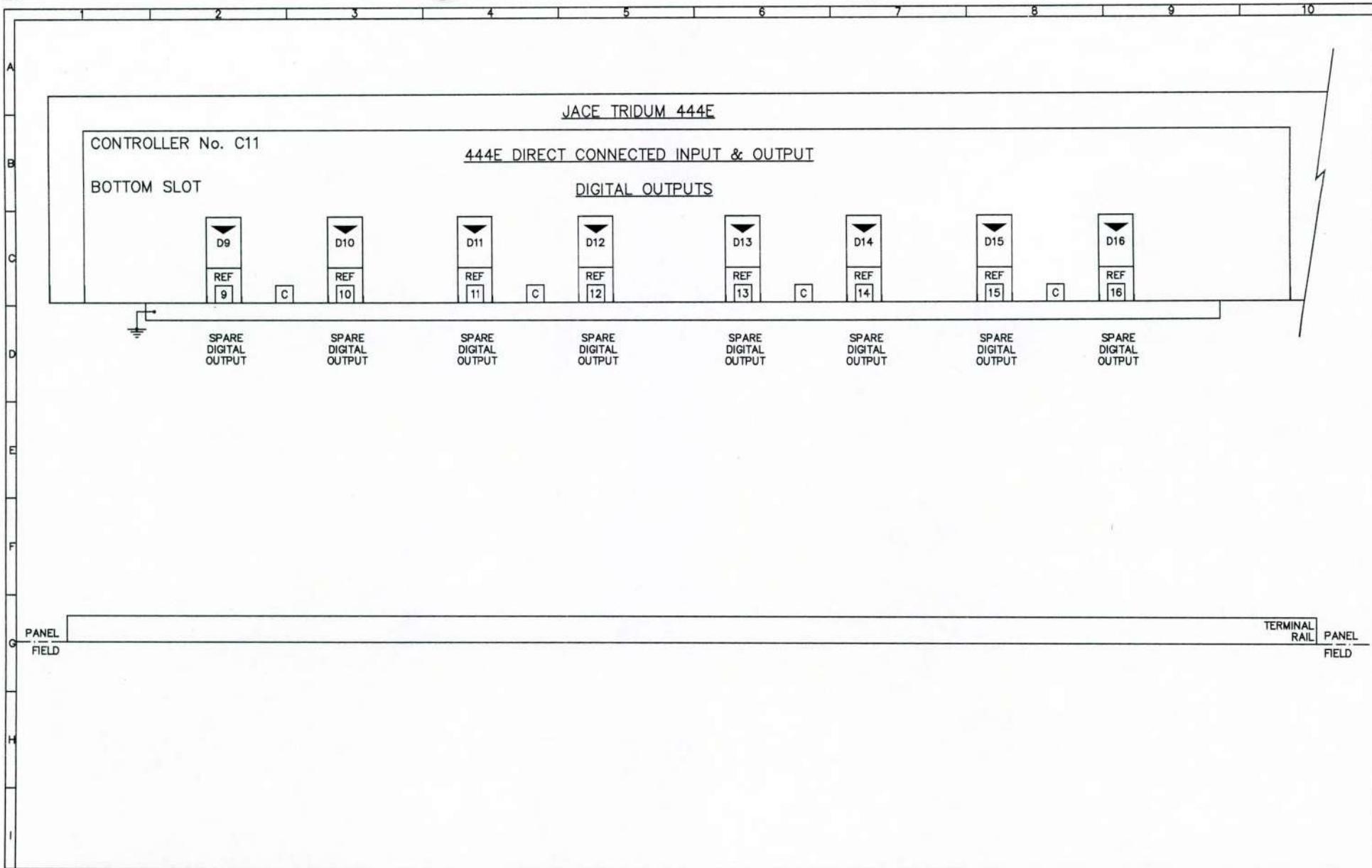
INTEGRATED CONTROL SYSTEMS

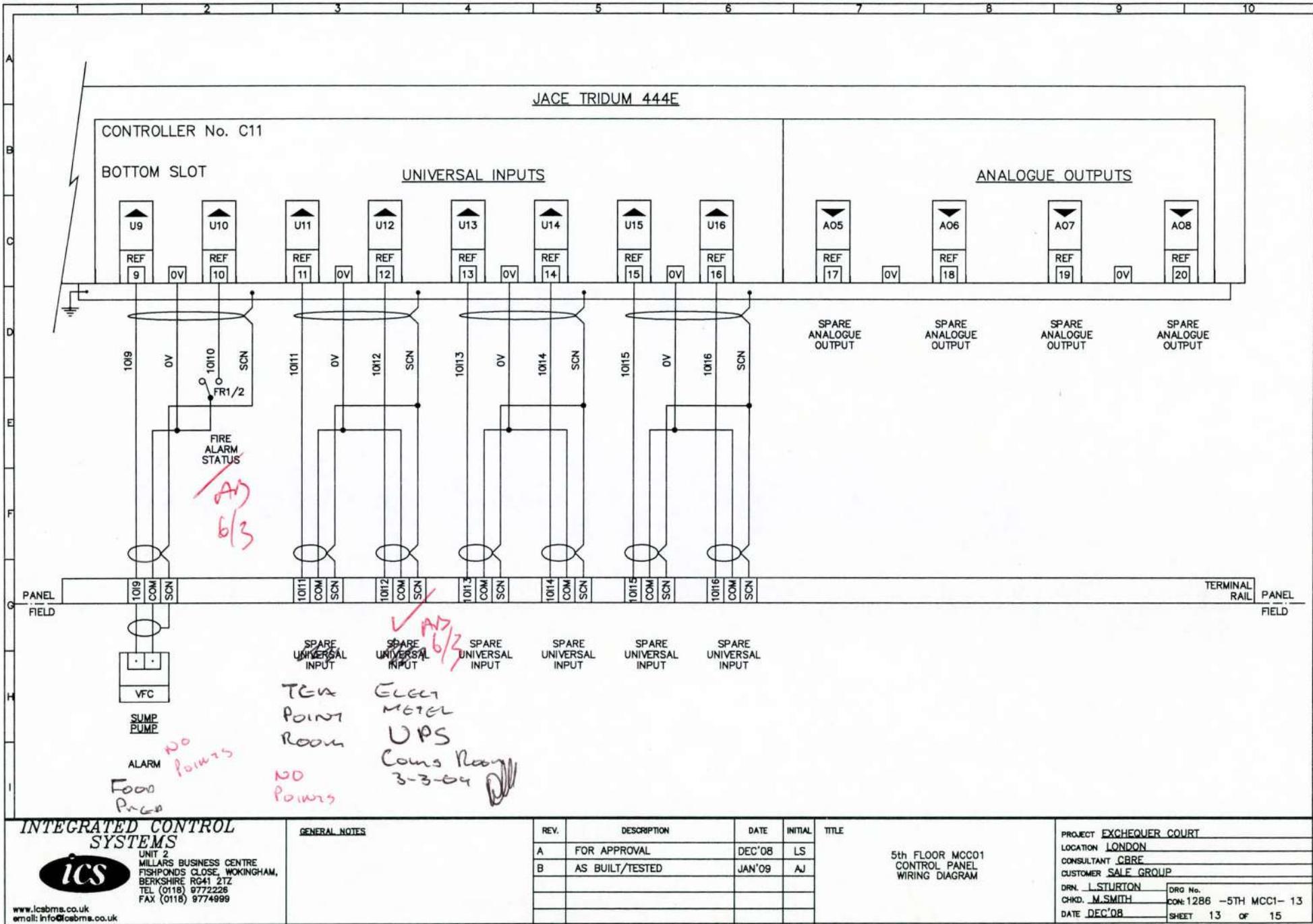


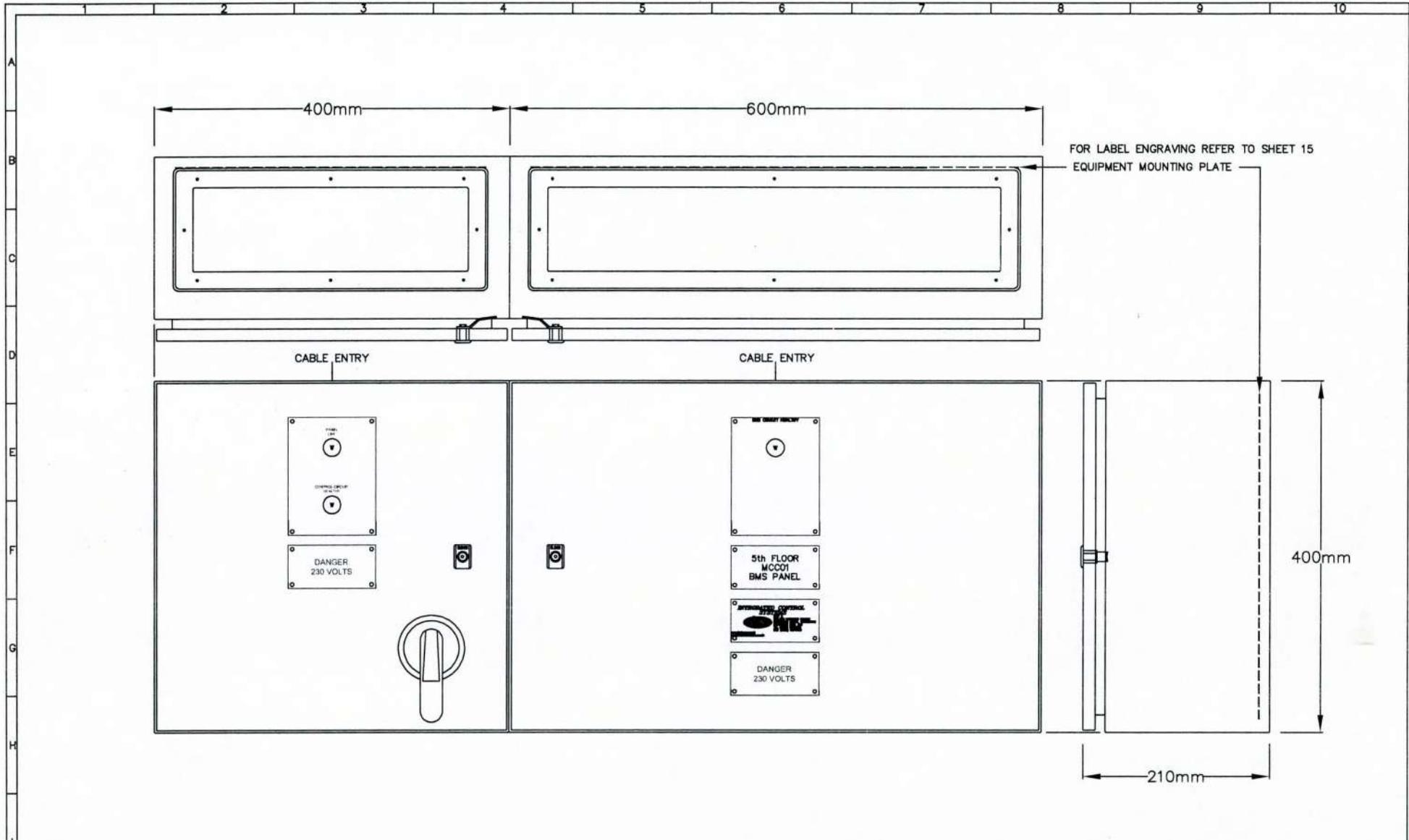
UNIT 2
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BERKSHIRE RG41 2TZ
TEL (0118) 9772226
FAX (0118) 9774999
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email: info@icsbms.co.uk

GENERAL NOTES

REV.	DESCRIPTION	DATE	INITIAL	TITLE	PROJECT EXCHEQUER COURT
A	FOR APPROVAL	DEC'08	LS	5th FLOOR MCC01 CONTROL PANEL WIRING DIAGRAM	LOCATION LONDON
B	AS BUILT/TESTED	JAN'09	AJ		CONSULTANT CBRE
					CUSTOMER SALE GROUP
					DRN. I. STURTON DRG No. CHKD. M. SMITH CON: 1286 - 5TH MCC1- 11 DATE DEC'08 SHEET 11 OF 15







SCALE 1 : 2

INTEGRATED CONTROL SYSTEMS



www.icsbms.co.uk
email: info@icsbms.co.uk

UNIT 2
MILLARS BUSINESS CENTRE
FISHPONDS CLOSE, WOKINGHAM,
BERKSHIRE RG41 2TZ
TEL (0118) 9772226
FAX (0118) 9774999

GENERAL NOTES

ENCLOSURE DIMS : 500mm x 400mm x 210mm
MOUNTING PLATE DIMS : 470mm x 350mm
PART No. : MAS0504021
IP RATING : 66
COLOUR : RAL 7035 GRAY

REV.

DESCRIPTION

DATE

INITIAL

TITLE

A

FOR APPROVAL

DEC'08

LS

B

AS BUILT/TESTED

JAN'09

AJ

5th FLOOR MCC01
CONTROL PANEL
WIRING DIAGRAM

PROJECT EXCHEQUER COURT

LOCATION LONDON

CONSULTANT CBRE

CUSTOMER SALE GROUP

DRN. J.L STURTON

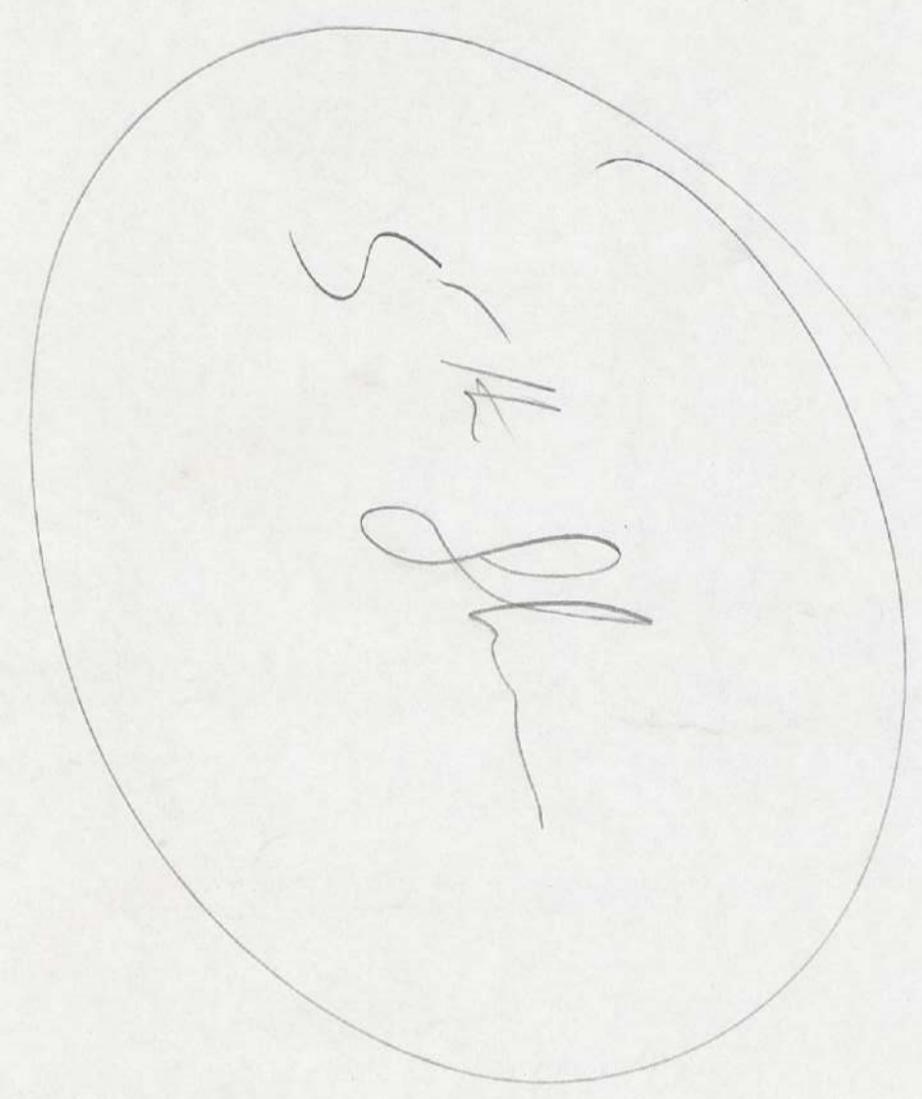
CHKD. M.SMITH

DATE DEC'08

DRG No.
CON:1286 -5TH MCC1- 14
SHEET 14 OF 15

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COMMISSIONING FILE

SECTION 3

INSTALLATION & LAYOUT DRAWINGS

LEGEND

- NEW & RELOCATED DUCTWORK AND VAV UNITS
- NEW PIPework & VALUES
- Existing Services To Remain
- Existing Services To Be Removed / Relocated




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— II —





LEGEND

	NEW & RELOCATED DUCTWORK AND VAV UNITS
	NEW PIPEWORK & VALVES
	EXISTING SERVICES TO REMAIN
	EXISTING TO BE REMOVED / RELOCATED

APPROVAL

Sale Service & Maintenance Ltd
Group House, Albion Road
Reigate, Surrey RH2 7JY
Tel 01737 226711
Fax 01737 224573
www.salegroup.co.uk

TRAVELERS

EXCHEQUER COURT
33 ST MARY AXE
LONDON
EC3A 8LL

THIRD FLOOR
MECHANICAL SERVICES
LAYOUT
SHEET 1 OF 2

SCALE: 1:50 DATE: JAN 09 DRAWN: CCS CHECKED: KL
JOB: SA/3062 DRAWING: M/3/301 REV: A

Height 1350
NEXT TO Light Switch



General Note:
1. This drawing defines building services work data and must not be taken or copied for any other purpose than the design intent only and should not be used for fabrication purposes.
2. Contractor to ensure that all specified materials are applied and installed as per the Manufacturers recommendations. Contractor is responsible for any deviation from the manufacturers recommendations.
3. Contractor to ensure that all services comply with Local Authorities Building Regulations and Approved Document B.

4. Contractor to check on delivery dates and specified materials and fittings to avoid any delays in the project. Contractor is responsible for any deviation from the manufacturers recommendations.

5. Contractor to check on delivery dates and specified materials and fittings to avoid any delays in the project. Contractor is responsible for any deviation from the manufacturers recommendations.

6. All construction materials to comply with current fire regulations.

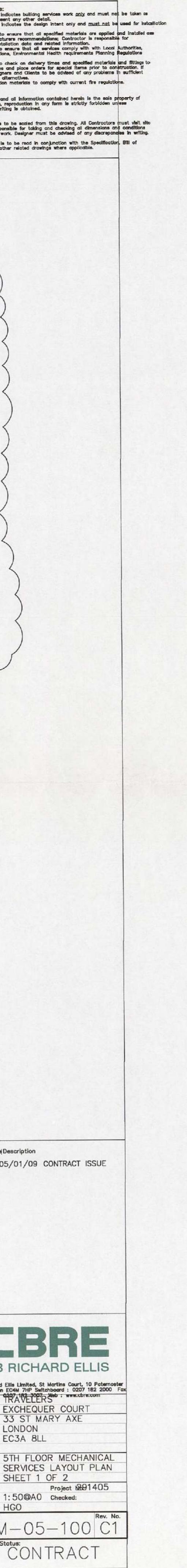
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No part of this document is to be copied from this drawing. All Contractors must verify site conditions and take responsibility for taking and checking off dimensions and conditions before proceeding with any work. Any deviation from the drawings must be agreed with the Project Manager, Designers and Client to be checked off any problems in sufficient time to allow for any changes to be made.

This document is to be read in conjunction with the Specification, Bill of quantities and other related drawings where applicable.

Legend:



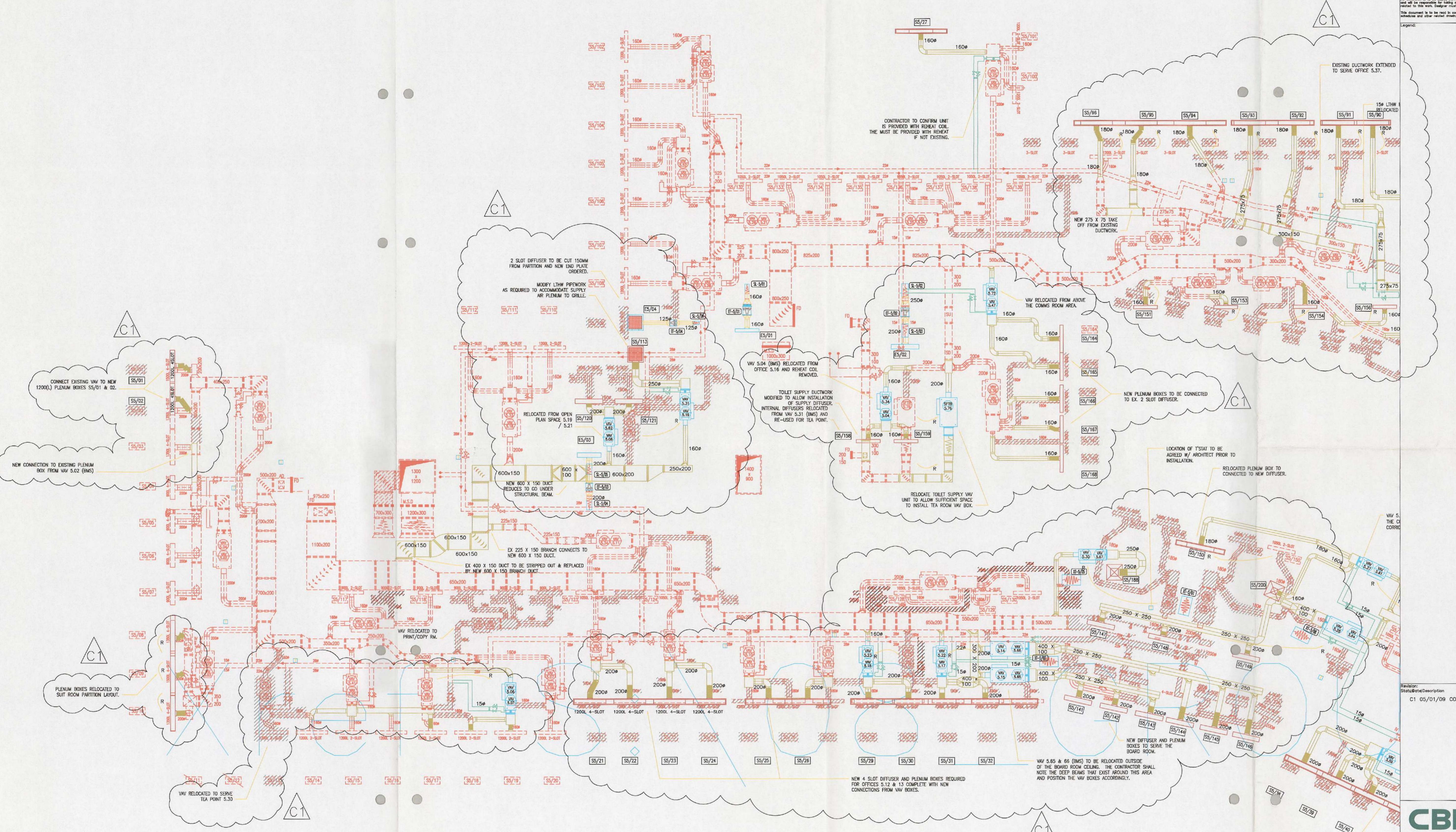


General Note:
1. This drawing indicates building services work 2022 and must not be taken as final.
2. This drawing indicates the design intent only and must not be used for installation.
3. Contractors to ensure that all specified materials are supplied and installed as per the specification, drawings and any other instructions given by CBRE, the architect, engineer, quantity surveyor, building control authority, fire authority and CDM.
4. Contractors to check on delivery times and specified materials and drawings to meet programme and place orders for specified items prior to construction. If delivery times are longer than expected, contractors must advise the architect in writing to specify alternative.

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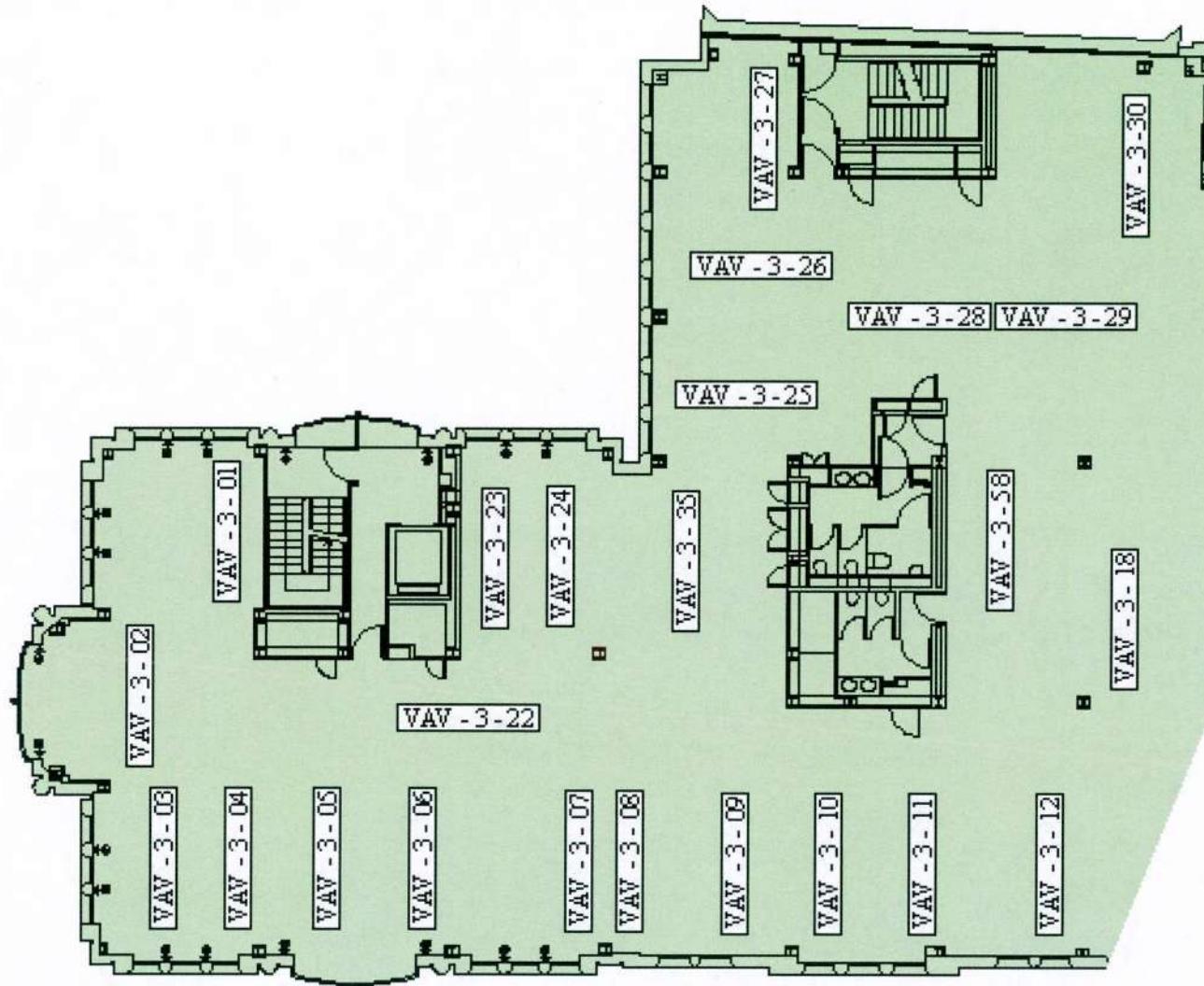
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Revision Status
C1 05/01/09 CONTRACT ISSUE

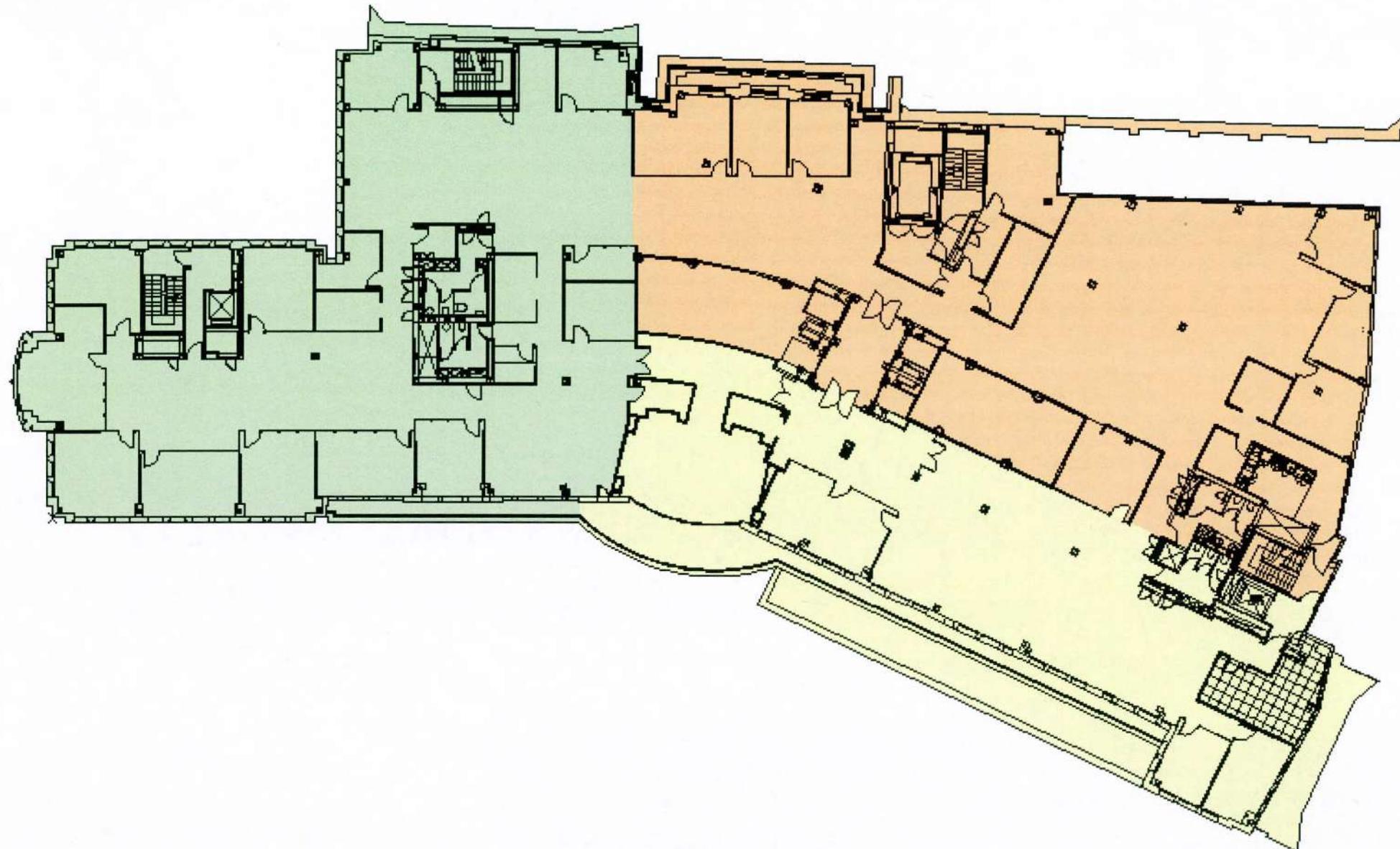
CBRE
CB RICHARD ELLIS

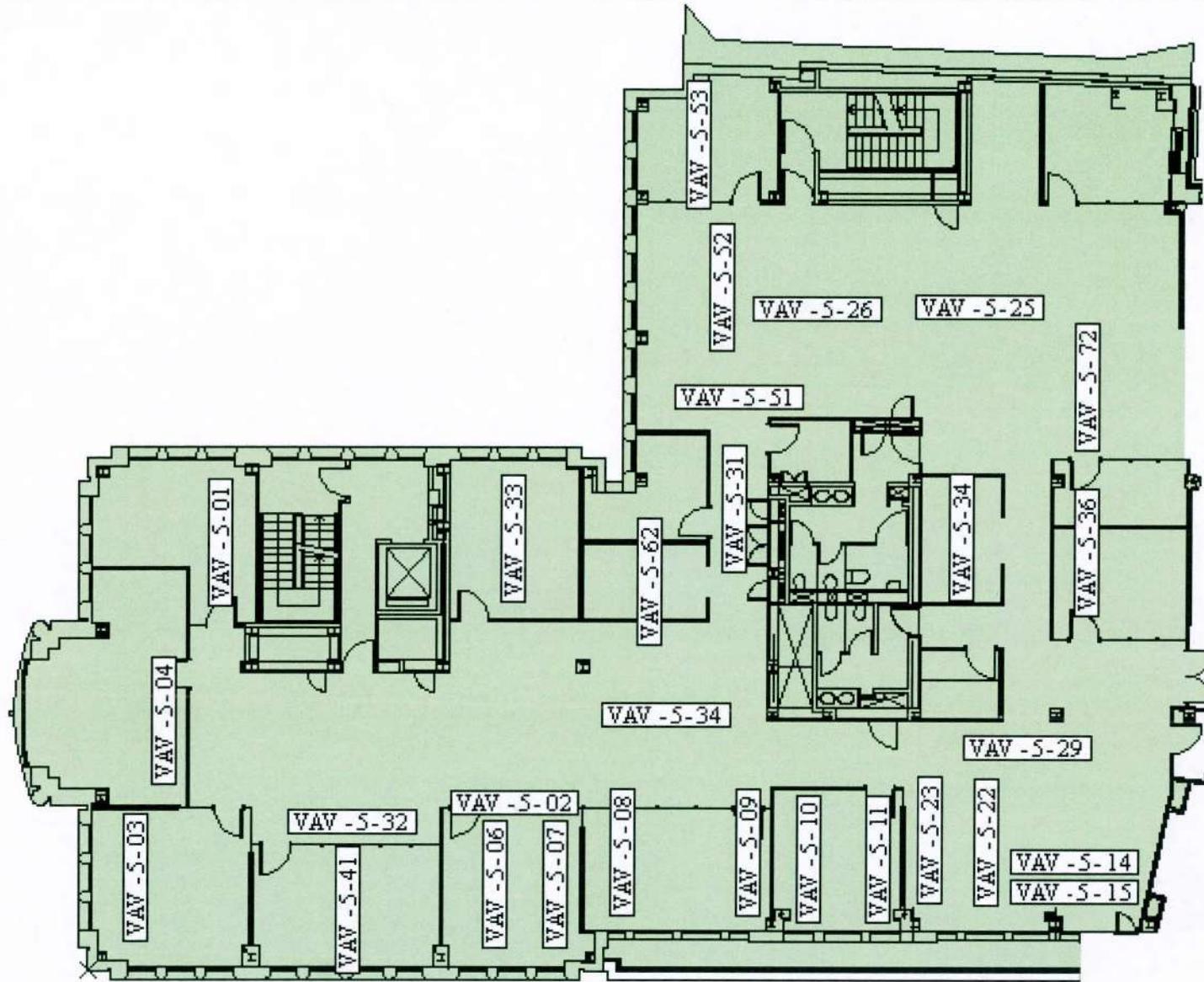
CB Richard Ellis Limited, St Martins Court, 10 Waterloo Row, London EC4M 9PF. Switchboard: 0207 162 2000. Fax: Project: TRAVELERS EXCHEQUER COURT Address: 33 ST MARY AXE LONDON EC3A 8LL Drawing: 5TH FLOOR MECHANICAL SERVICES LAYOUT PLAN SHEET 1 OF 2 Date: 09/14/05 Scale: 1:50@A0 Checked: HGO Drawn: Rev. No: M-05-100/C1 Drawing Status: CONTRACT



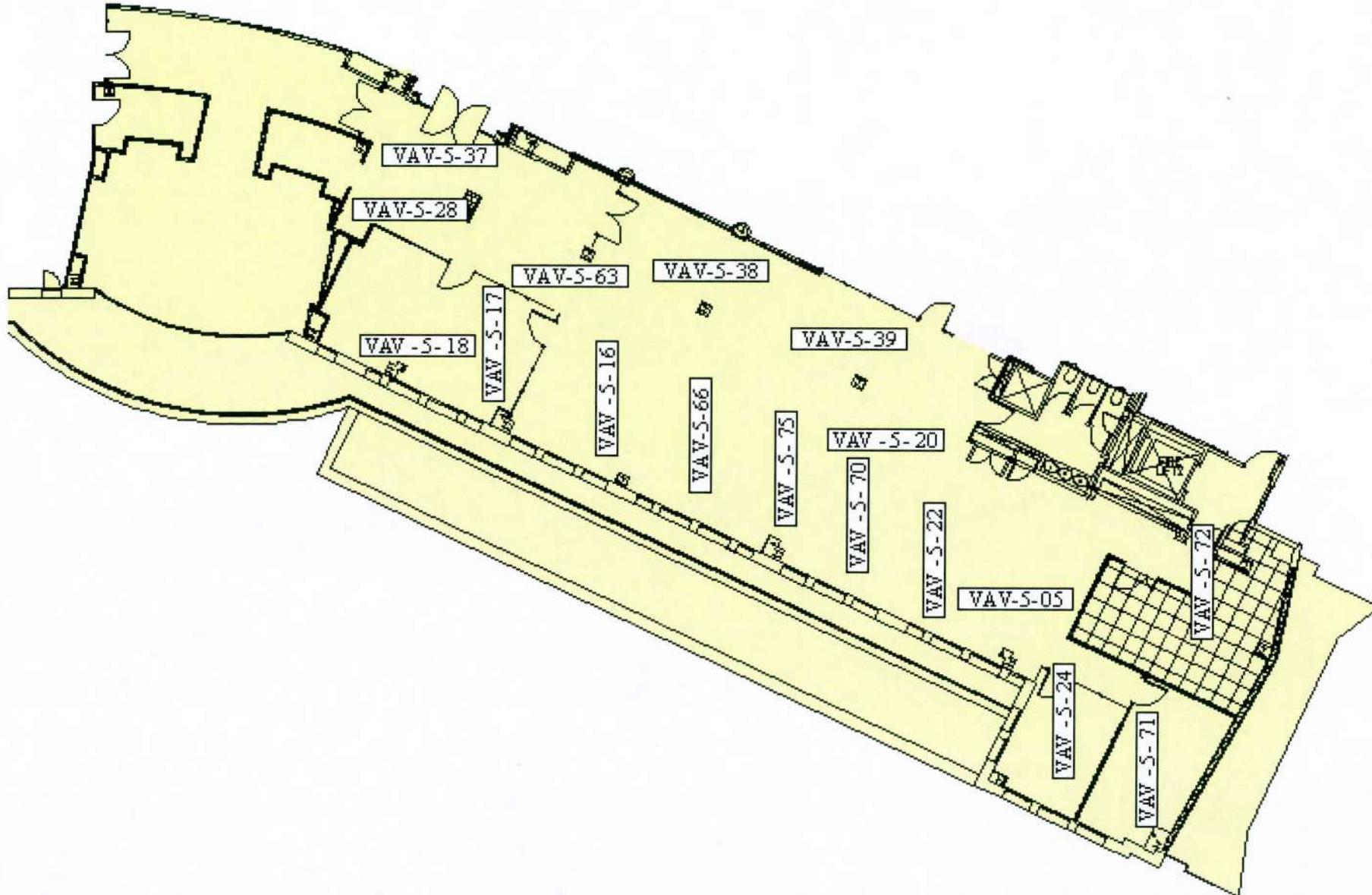








- EXCHEQUER COURT -
- LEVEL 5 ZONE 2 -

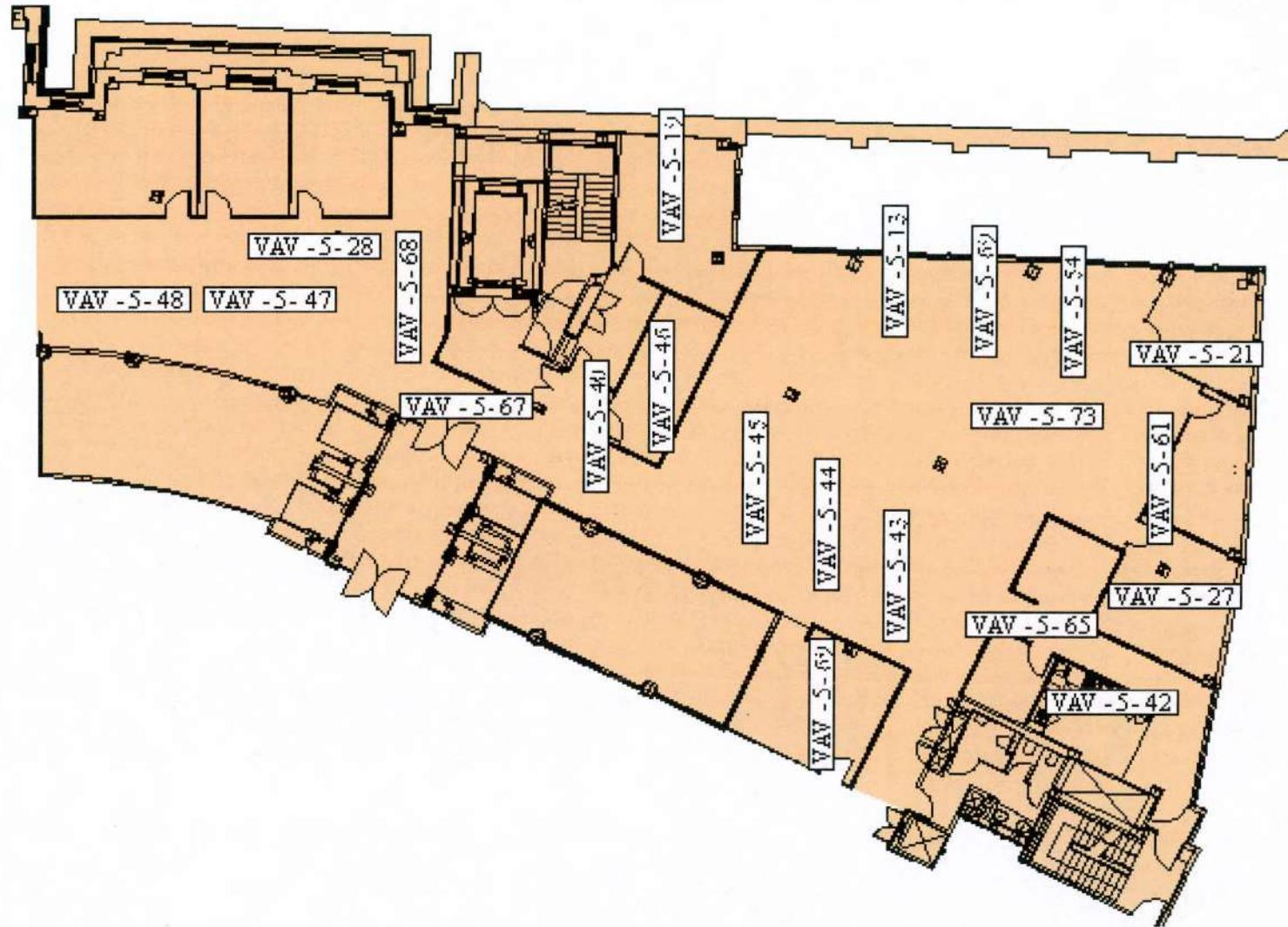




- EXCHEQUER COURT -
- LEVEL 5 ZONE 3 -



OAT

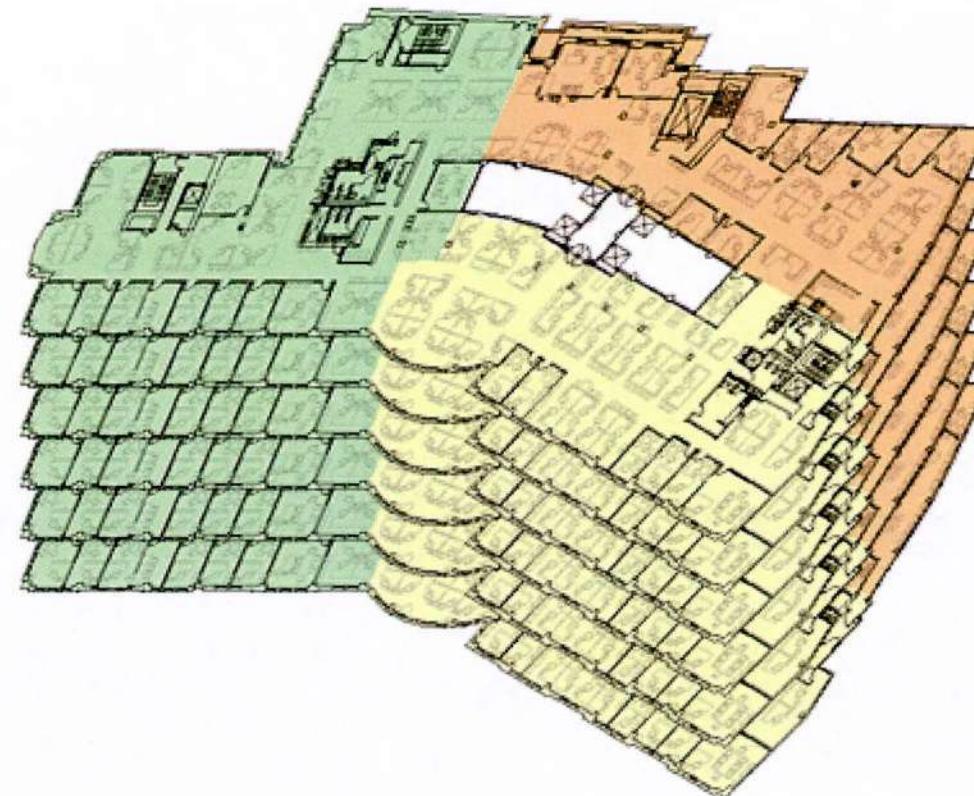




- EXCHEQUER COURT -
- LEVEL 2 OVERVIEW -



OAT





- EXCHEQUER COURT -
- CONSUMPTION METERING -



OAT

3rd Floor MCC01 Consumption	Current	Daily	Weekly	Monthly	Yearly
Electricity Meter No.1					
Electricity Meter No.2					

5th Floor MCC01 Consumption	Current	Daily	Weekly	Monthly	Yearly
Electricity Meter No.1					
Electricity Meter No.2					

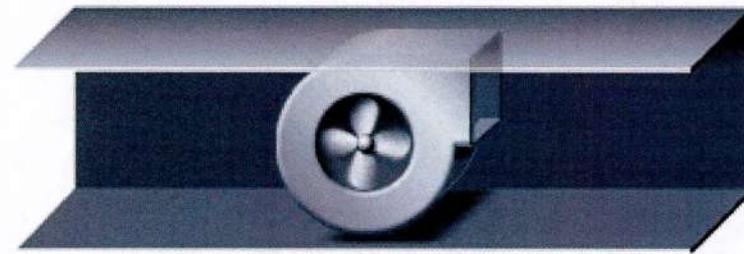
1003 (Level 3 Room)					
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- EXCHEQUER COURT -



OAT



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- EXCHEQUER COURT -
- MISCELLANEOUS MONITORING -

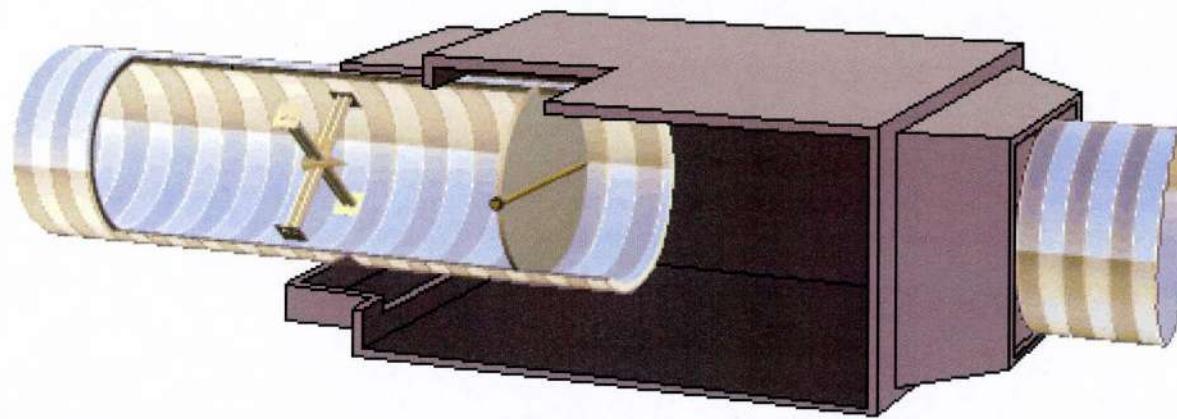


3rd Floor MCC01 Control Panel	
Sump Pump Alarm	NOT AVAILABLE
Fire Alarm Status	NOT AVAILABLE

NOT AVAILABLE
NOT AVAILABLE

5th Floor MCC01 Control Panel	
Sump Pump Alarm	NOT AVAILABLE
Fire Alarm Status	NOT AVAILABLE

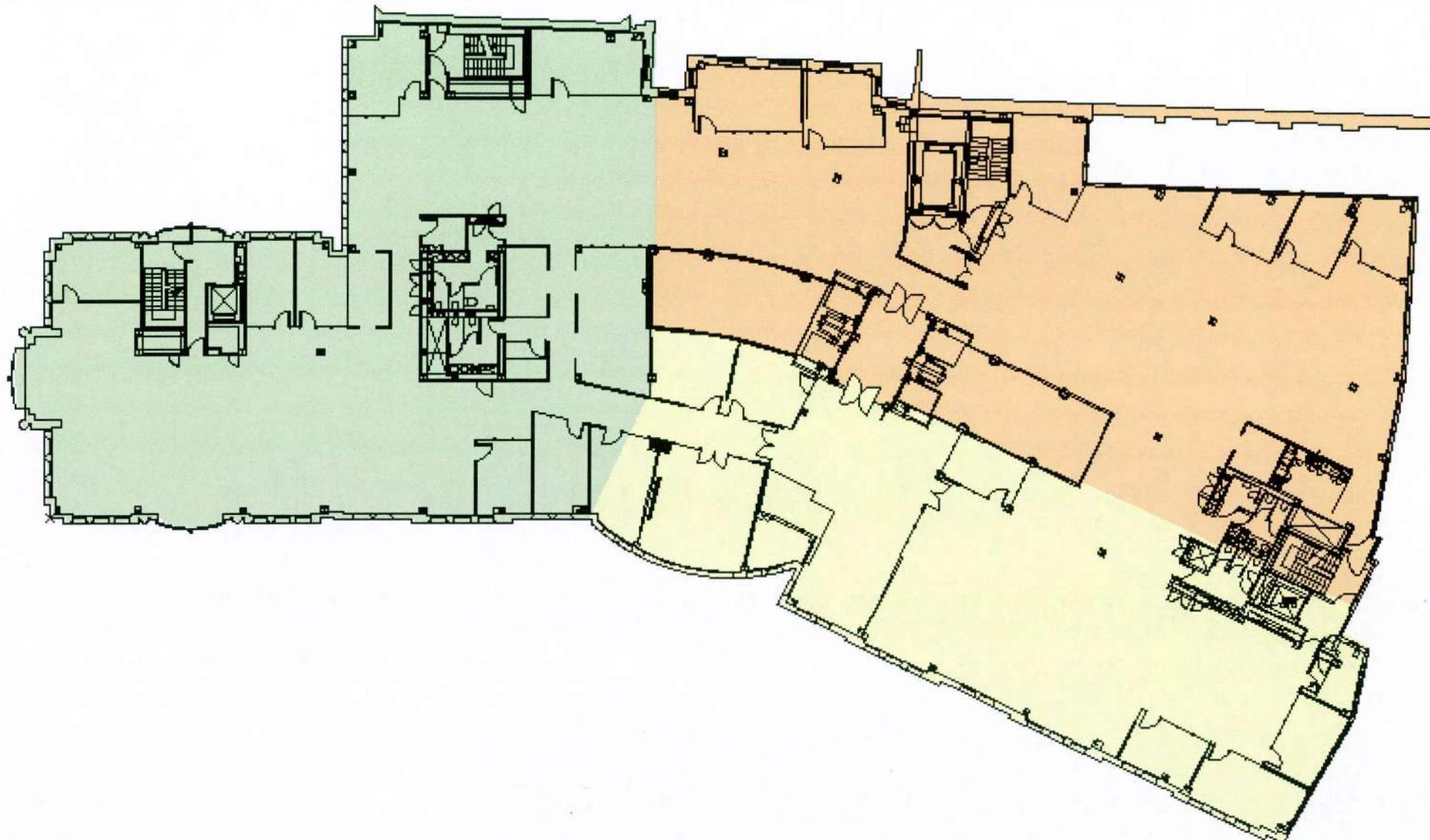
NOT AVAILABLE
NOT AVAILABLE



Enable	
Flow Setpoint	
Flow	



- EXCHEQUER COURT -
- THIRD FLOOR OVERVIEW -





PROJECT:				FAX:				REVISION: A					
CON No: 1286		CLIENT: EIWHS		TEL:		DATE: 07/01/2009							
Item No.	Mala Mech Drg Ref	Box Ref at Box yellow sticker	Box Trox Ref	Location	Flow Rate l/s	Coil Pressure Drop kPa	Calculated System kvs	Selected 3 or 4 Port Valve Data					
								Size mm	kvs value	% Authority	Pressure Drop kPa		
5\25	05\24				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	V5823C2009	M7410C1007
5\25				529	0.052	30	0.34	15 mm	0.25	65.14	56.07 kPa	V5823C2009	M7410C1007
5\26	05\21				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	V5823C2009	M7410C1007
5\42	05\43		05\42	Open Plan	0.019	140	0.06	15 mm	0.25	5.08	7.49 kPa	V5823C2009	M7410C1007
5\28	05\64				0.023	140	0.07	15 mm	0.25	7.27	10.97 kPa	V5823C2009	M7410C1007
5\29	05\16				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	V5823C2009	M7410C1007
5\32	05\06				0.017	55	0.08	15 mm	0.25	9.83	5.99 kPa	V5823C2009	M7410C1007
34	05\11				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	V5823C2009	M7410C1007
36	05\26				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	V5823C2009	M7410C1007
37	05\61				0.017			15 mm				V5823C2009	M7410C1007
38	05\62				0.017			15 mm				V5823C2009	M7410C1007
39	05\63				0.017			15 mm				V5823C2009	M7410C1007
40	05\33				0.017			15 mm				M7410C1007	V5823C2009
43	05\45				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	M7410C1007	V5823C2009
44	05\37				0.017			15 mm				M7410C1007	V5823C2009
45	05\36				0.017			15 mm				M7410C1007	V5823C2009
46	05\35				0.017			15 mm				M7410C1007	V5823C2009
47	05\30				0.017	55	0.08	15 mm	0.25	9.83	5.99 kPa	M7410C1007	V5823C2009
48	05\28				0.017	55	0.08	15 mm	0.25	9.83	5.99 kPa	M7410C1007	V5823C2009
65	05\44				0.017	140	0.05	15 mm	0.25	4.10	5.99 kPa	M7410C1007	V5823C2009
67	05\32				0.017			15 mm				M7410C1007	V5823C2009
68	05\31				0.023			15 mm				M7410C1007	V5823C2009

Integrated Control Systems Ltd
 Unit 2 Millars Business Centre, Fishponds Close, Wokingham, RG41 2TZ
 Telephone 0118 9772226 Fax 0118 9774999

FORM 11B ISSUE 2



PROJECT:

FAX:

REVISION: A

CON No: 1286

CLIENT: EIWHS

TEL:

DATE: 07/01/2009

Item No.	Mala Mech Drg Ref	Box Ref at Box yellow sticker	Box Trox Ref	Location	Flow Rate l/s	Coil Pressure Drop kPa	Calculated System kvs	Selected 3 or 4 Port Valve Data				Valve Assembly Reference	Actuator Reference
								Size mm	kvs value	% Authority	Pressure Drop kPa		
69	05\41				0.019	70	0.08	15 mm	0.25	9.66	7.49 kPa	M7410C1007	V5823C2009
03\59	03\59				0.017	55	0.08	15 mm	0.25	9.83	5.99 kPa	M7410C1007	V5823C2009
03\13	03\18				0.017	30	0.11	15 mm	0.25			M7410C1007	V5823C2009
03\16	03\16				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	M7410C1007	V5823C2009
03\17	03\17				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	M7410C1007	V5823C2009
03\21	03\21				0.017	140	0.05	15 mm	0.25	4.10	5.99 kPa	M7410C1007	V5823C2009
03\22	03\22				0.017	140	0.05	15 mm	0.25	4.10	5.99 kPa	M7410C1007	V5823C2009
03\35	03\35				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	M7410C1007	V5823C2009
03\18					0.017	55	0.08	15 mm	0.25	9.83	5.99 kPa	M7410C1007	V5823C2009
03\41	03\41				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	M7410C1007	V5823C2009
03\49	03\48				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	M7410C1007	V5823C2009
03\19	03\20				0.024	70	0.10	15 mm	0.25	14.58	11.94 kPa	M7410C1007	V5823C2009
03\37	03\37				0.017	30	0.11	15 mm	0.25	16.65	5.99 kPa	M7410C1007	V5823C2009

Integrated Control Systems Ltd
 Unit 2 Millars Business Centre, Fishponds Close, Wokingham, RG41 2TZ
 Telephone 0118 9772226 Fax 0118 9774999

FORM 11B ISSUE 2

Schedule of Variable Air Volume Boxes
3 Floor

MALA MECH DRAWING REF	BOX REF at Box (yellow sticker)	BMS H/E REF	MALA ELEC DRAWING REF	BOX REF (Trox sticker)	Location	Required Design Air Vol Max (L/s)	Required Design Air Vol Min (L/s)	Required Reheat Capacity (kW)	VAV Box Size	Ex BMS Max Setting (L/s)	Ex BMS Min Setting (L/s)	Ex. 1 Row LthW Heater (Y/N)	Reheat Required	Required LPHW Flow Rate L/s	New Reheat Coil Handing (See note)	Product Code	Notes
03/09	03/09	03/29	03/29	-	301,2,3,303 Reception area & Reception Seating	163	49	0.61	200	160	45	N	Y	0.017	R	SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - add reheat coil
03/10	03/10	03/16	03/16	-	304 Broker reception seating	155	24	0.45	160	160	35	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - relocate
03/11	03/11	03/17	03/17	-	304 Broker reception seating	99	24	0.45	160	160	35	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - relocate
Fed from box 302 in broker reception																	
03/14	03/14	03/14	03/14	-	307 Meeting Room	211	52	0.69	200	200	60	Y	Y	0.024		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/15	03/15	03/15	03/15	-	307 Meeting Room	211	52	0.59	200	200	80	Y	Y	0.024		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/16	03/16	03/16	03/16	-	308 Meeting Room	185	41	0.62	160	90	35	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - add reheat coil
03/17	03/17	03/17	03/17	-	309 Meeting Room	79	40	0.61	200	200	60	N	Y	0.017	R	SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - add reheat coil & relocate
03/18	03/18	03/18	03/18	-	310 Meeting Room	101	25	0.33	160	160	40	N	Y	0.017	L	SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - add reheat coil & relocate
03/19	03/19	03/19	03/19	-	311 Meeting Room	170	39	0.74	160	120	40	Y	Y	0.018		SP-TVZ-V2_180 /0/0/MIN-MAX*****	Existing
03/21	03/21	03/21	03/21	-	312 Office	78	26	0.49	160	90	35	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/25	03/25	03/05	03/05	-	313, 314 Open plan (perimeter)	148	45	0.65	200	138	40	Y	Y	0.021		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/26	03/26	03/05	03/05	-	313, 314 Open plan (perimeter)	99	30	0.56	160	124	40	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/27	No ref	03/07	03/07	-	313, 314 Open plan (perimeter)	99	30	0.56	160	120	40	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/28	03/28	03/13	'03/13	-	313, 314 Open plan (perimeter)	99	30	0.56	160	80	35	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/29	03/29	03/18	'03/18	-	313, 314 Open plan (perimeter)	99	30	0.56	160	120	40	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/30	No ref	03/49	'03/49	-	313, 314 Open plan (central)	218	48	0.61	200	215	70	N	Y	0.017	R	SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - add reheat coil
03/31	No ref	03/50	'03/50	-	313, 314 Open plan (central)	213	45	0.61	160	120	40	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - relocate
03/32	No ref	03/53	'03/53	-	315 Open plan (perimeter)	154	87	1.60	200	160	40	Y	Y	0.041		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/33	No ref	03/54	'03/54	-	315 Open plan (perimeter)	95	25	0.47	160	125	35	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/34	03/02	03/04	03/04	-	316 Open plan	205	40	0.76	200	260	90	Y	Y	0.019		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/35	03/91	03/01	03/01	-	317 Office	194	104	1.97	200	260	90	Y	Y	0.049		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - relocate
03/36	03/23	03/35	03/35	-	318 Office	117	58	1.14	200	180	55	Y	Y	0.028		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/37	03/24	03/73	03/73	-	319 Hot Office	68	28	0.49	160	120	35	Y	Y	0.017		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - relocate
03/38	03/25	03/73	03/73	-	320 Copy / Print Room	150	25	0.38	160	115	35	N	Y	0.017	R	SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - add reheat coil & relocate
03/28	'03/28	'03/13	'03/13	-	323, 330 Open plan (central)	275	40	0.61	200	170	50	N	N	0.017	R	SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - add reheat coil
03/29	'03/29	'03/18	'03/18	-	323, 330 Open plan (central)	275	40	0.61	200	240	70	N	N	0.017	R	SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - add reheat coil
03/33	No ref	03/49	'03/49	-	323, 330 Open plan (central)	138	25	0.38	160	130	55	N	N	0.017	R	SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - add reheat coil
03/32	No ref	03/50	'03/50	-	323, 330 Open plan (central)	138	25	0.38	160	130	55	N	N	0.017	R	SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing - add reheat coil
03/35	No ref	03/53	'03/53	-	323, 330 Open plan (perimeter)	151	48	0.63	200	160	50	Y	Y	0.021		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/26	03/26	03/54	'03/54	-	323, 330 Open plan (perimeter)	151	49	0.63	200	160	50	Y	Y	0.021		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/47	03/27	03/55	'03/55	-	324 Office	173	75	1.45	160	120	40	Y	Y	0.025		SP-TVZ-V2_160 /0/0/MIN-MAX*****	Existing
03/50	03/50	03/57	'03/57	-	325 Office	170	71	1.34	160	110	35	Y	Y	0.033		SP-TVZ-V2_180 /0/0/MIN-MAX*****	Existing
03/58	03/58	03/59	'03/59	-	326 Tea Point	96	15	-	125	60	18	N	N	VALUE		SP-TVZ-V2_125 /0/0/MIN-MAX*****	Existing - relocate
03/59	No ref	03/58	'03/58	-	329 Cafe Breakout	198	40	0.81	200	150	45	N	Y	0.017	R	SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - add reheat coil & relocate
03/51	03/51	03/57	'03/57	-	330 Office	191	59	1.31	200	250	75	Y	Y	0.020		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - relocate
03/54	03/54	03/59	'03/59	-	333 Office	131	45	0.83	200	230	75	Y	Y	0.021		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - relocate
03/43	03/43	03/44	'03/44	-	336 Open plan (perimeter)	205	57	1.07	160	160	55	Y	Y	0.024		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - relocate
03/42	03/42	03/12	'03/12	-	336 Open plan (perimeter)	204	57	1.07	200	210	100	Y	Y	0.026		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/45	No ref	03/44	'03/44	-	336 Open plan (perimeter)	226	93	1.78	200	240	70	Y	Y	0.043		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - relocate
03/45	03/45	03/55	'03/55	-	336 Open plan (perimeter)	226	93	1.78	200	240	70	Y	Y	0.043		SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing
03/48	'03/47	'03/43	'03/43	-	337 Open plan (central)	126	25	0.38	200	120	30	N	N	0.017	R	SP-TVZ-V2_200 /0/0/MIN-MAX*****	Existing - add reheat coil
03/40	'03/41	'03/46	'03/46	-	337 Open plan (central)	126	28	0.40	160	90	30	N	Y	0.017</td			

Schedule of Variable Air Volume Boxes
5 Floor

MALA MECH DRAWING REF	BOX REF at Box (yellow sticker)	BMS H/E REF	MALA ELEC DRAWING REF	BOX REF (Trox sticker)	Location	Required Design Air Vol Max (L/s)	Required Design Air Vol Min (L/s)	Required Reheat Capacity (kW)	VAV Box Size	Ex BMS Max Setting (L/s)	Ex BMS Min Setting (L/s)	Ex. 1 Row LthW Heater Y/N	Reheat Required	Required LPHW Flow Rate L/s	New Reheat Coil Handling (See note)	Product Code	Notes
1	05/01	05/01	05/01	518	Office	175	50	1.056	200	180	50	Y	Y	0.025		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	
3	05/03	05/03	05/03	518	Office	205	50	1.489	200	135	40	Y	Y	0.037		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing
4	05/02	05/02	05/02	517	Office	250	45	1.656	200	130	60	Y	Y	0.045		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing
5	05/00	05/00	05/00	514	Open Plan (Perimeter)	217	38	1.108	200	135	40	Y	Y	0.027		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing
6	05/07	05/07	05/07	514	Office	105	25	0.474	160	135	45	Y	Y	0.017		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - relocated
7	05/09	05/09	05/09	514	Office	52	25	0.474	160	120	40	Y	Y	0.017		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing
8	05/10	05/10	05/10	513	Office	95	38	0.662	160	120	40	Y	Y	0.017		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing
9	05/12	05/12	05/12	513	Office	85	35	0.682	160	110	30	Y	Y	0.017		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing
10	05/13	05/13	05/13	512	Office	81	28	0.540	160	110	40	Y	Y	0.017		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - relocated
11	05/14	05/14	05/14	512	Office	51	28	0.540	160	135	40	Y	Y	0.017		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - relocated
13	05/23	05/23	05/23	545, 546	Open Plan (Perimeter)	228	40	0.755	200	75	25	Y	Y	0.019		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing
14	05/68	05/68	05/14	500	Board Room	202	39	0.939	200	300	30	Y	Y	0.023		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - relocated
15	05/65	05/65	05/15	506	Board Room	202	49	0.939	200	200	90	Y	Y	0.023		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - relocated
16	05/67	05/57	05/16	559, 560	Open Plan (Perimeter)	144	39	0.738	160	135	40	Y	Y	0.018		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing
17	05/58	05/58	05/17	804	Meeting Room	125	32	0.637	160			Y	Y	0.017		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - relocated
18	05/59	05/69	05/18	504	Meeting Room	138	49	0.825	200	160	50	Y	Y	0.023		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - relocated
19	05/34	05/34	05/19	541	Office	97	74	1.425	140	150	50	Y	Y	0.035		SP-TVZ-V2_ 140 /0/0/MIN-MAX*****	Existing
20	'05/51	'05/51	'05/51	559, 560	Open Plan (Central)	142	25	0.383	160			N	Y	0.017	L	SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - add reheat coil and relocate
21	05/45	05/45	05/21	547	Office	175	50	1.335	200	180	50	Y	Y	0.028		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - relocate
22	05/13	05/13	05/12	510	Open Plan (Perimeter)	129	41	0.899	140			Y	Y	0.021		SP-TVZ-V2_ 140 /0/0/MIN-MAX*****	Existing - relocated
23	05/52	05/52	05/22	559, 560	Open Plan (Perimeter)	144	59	0.758	150	160	50	Y	Y	0.018		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing
24	05/15	05/15	05/23	510	Open Plan (Perimeter)	139	45	0.856	160	110	40	Y	Y	0.021		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - relocated
25	05/49	05/49	05/24	558	Office	156	33	1.570	160	135	40	Y	Y	0.038		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing
26	05/24	05/24	05/25	526	Open Plan (Central)	167	40	0.612	200			N	Y	0.017	R	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add reheat coil
27	05/25	05/25	-	529	Office	130	19	2.112	200			N	Y	0.052	R	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add reheat coil
28	05/21	05/21	05/26	526	Open Plan (Central)	157	40	0.612	200			N	Y	0.017	R	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add reheat coil
42	'05/43	'05/43	'05/43	553	Tea Point	232	40	0.759	200	75	25	N	Y	0.019	L	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - add reheat coil and relocate
28	05/54	05/54	05/54	523	Board Room	202	43	0.929	200	150	75	N	Y	0.023	P	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add Coil & relocate
29	05/27	05/27	05/55	538	Office	155	56	1.064	200	200	70	Y	Y	0.026		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing
29	05/29	05/29	05/29	537	Office	129	47	0.764	200			Y	Y	0.018		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing
30	05/16	05/16	05/31	508 & 511	Storage/cloak & Open Plan	110	40	0.832	200			N	Y	0.017	L	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add reheat coil
31	05/19	05/19	05/19	509	Storage Room	154	43	0.561	160			N	N	VALUE!		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - relocated
32	05/60	05/60	05/27	519	Open Plan (Central)	90	25	0.383	160	135	40	Y	Y	0.017	R	SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - relocated
33	05/10	05/10	05/15	520	Office	132	69	1.193	200			N	Y	0.041	R	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add reheat coil
34	05/11	05/11	05/24	521	Open Plan (Central)	153	40	0.812	200	120	40	N	Y	0.017	L	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add reheat coil
34	05/04	05/04	05/04	530	Tea Point	98	25	0.383	160	300	100	Y	Y	0.017		SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	Existing - relocated
35	05/25	05/25	05/38	509	Office	143	40	0.612	200			N	Y	0.012	R	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - Add Coil & relocate
37	05/61	05/61	05/61	503 & 505	Canteen Room & Board Room/corridor	75	25	0.383	110			N	Y	0.017	R	SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	New
38	05/62	05/62	05/62	508	Open Plan (Central)	95	25	0.383	140	75	25	N	Y	0.017	R	SP-TVZ-V2_ 160 /0/0/MIN-MAX*****	New
39	05/63	05/63	05/63	549	Open Plan (Central)	95	24	0.383	140	120	40	Y	Y	0.017	R	SP-TVZ-V2_ 145 /0/0/MIN-MAX*****	Existing - add reheat coil
40	05/32	05/32	05/32	554	IT Training Room	187	40	0.612	200	150	50	N	Y	0.017	R	SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - add reheat coil and relocate
41	05/05	05/05	05/05	515	Office	218	24	1.194	200	110	30	Y	Y	0.036		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing
27	'05/53	'05/53	'05/53	549	Library / Meeting Room	164	40	0.759	200	105	35	Y	Y	0.019		SP-TVZ-V2_ 200 /0/0/MIN-MAX*****	Existing - relocated
43	05/45	05/45	05/26	545, 546	Open Plan (Central)	124	29	0.383	2								

64	63	25
75	40	41x
65	21x	28
43	32x	29
47	39x	16
46	27	23
48	12	
74	67	
44	22	

42
36

198
40
200

16 \Rightarrow 64A2F8F20¹⁰⁰.

36.	39x	74
38.	41x	
42	56.	52x
	x1	
	x8	33
	28	16
		66

15

(56)

Zone 1

~~22~~

(36) New controller
~~18~~ Needed.

Zone 3

66

33

Zone 2

~~41~~

74.	39
27	46
28	21
29	32

4

4

COMMISSIONING FILE

SECTION 4

SPECIFICATION

5

5

COMMISSIONING FILE

SECTION 5

DATA SHEETS FOR SITE SPECIFIC DEVICES

6

6

COMMISSIONING FILE

SECTION 6

CHECK LISTS

VAV UNIT CHECK LISTS**Contract. No:****1286****Date of Visit:****System**Euro Jace R2**Contract Name:****3 and 5 Exchequer Court****Engineer:****Sheet No:****1 of 1**

Controller Ref.	LAN	Address	Neuron I.D.	Comms	Temp Sensor	Valve(s) Operation		Fan Enable	Other	Comments
						Htg	Clg			

Details:- ✓ Checked and working correctly - X Checked and not working correctly - N/A Not applicable to this controller

VAV UNIT CHECK LISTS

Contract. No:
Date of Visit:

1286

SystemEuro Jace R2**Contract Name:****3 and 5 Exchequer Court****Engineer:****Sheet No:****1****of****1**

Controller Ref.	LAN	Address	Neuron I.D.	Comms	Temp Sensor	Valve(s) Operation		Fan Enable	Other	Comments
						Htg	Clg			

Details:- ✓ Checked and working correctly - X Checked and not working correctly - N/A Not applicable to this controller

VAV UNIT CHECK LISTS

Contract. No:

1286

Date of Visit:

System

Euro Jace R2

Contract Name:

3 and 5 Exchequer Court

Engineer:

Sheet No:

1 of 1

Controller Ref.	LAN	Address	Neuron I.D.	Comms	Temp Sensor	Valve(s) Operation		Fan Enable	Other	Comments
						Htg	Clg			

Details:- √ Checked and working correctly - X Checked and not working correctly - N/A Not applicable to this controller

EXCHEQUER COURT, LONDON

CHECKLIST

CHECK LIST

PROJECT: 1286

OUTSTATION: 3RD MCC 01

LOCATION: CONTROLLER C10 TOP SLOT

TYPE: JACE TRIDIUM 444E

UNIVERSAL INPUTS:

REV:1

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
D1	D	EXTRACT FAN EF3/01 ENABLE	AS	
D2	D	EXTRACT FAN EF3/02 ENABLE	AB	
D3	D	EXTRACT FAN EF3/03 ENABLE	AB	
D4	D	EXTRACT FAN EF3/04 ENABLE	AB	
D5	D	EXTRACT FAN EF3/05 ENABLE	AB	
D6	D	EXTRACT FAN EF3/06 ENABLE	AB	
D7	D	SPARE DIGITAL OUTPUT		
D8	D	SPARE DIGITAL OUTPUT		

EXCHEQUER COURT, LONDON

CHECKLIST

PROJECT: 1286**OUTSTATION: 3RD MCC 01****LOCATION: CONTROLLER C10 TOP SLOT****TYPE: JACE TRIDIUM 444E****UNIVERSAL INPUTS:****REV:1**

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
U1	U	EF3/01 CURRENT SENSING RELAY	<i>AB</i>	
U2	U	EF3/02 CURRENT SENSING RELAY	<i>AB</i>	
U3	U	EF3/03 CURRENT SENSING RELAY	<i>AB</i>	
U4	U	EF3/04 CURRENT SENSING RELAY	<i>AB</i>	
U5	U	EF3/05 CURRENT SENSING RELAY	<i>AB</i>	
U6	U	EF3/06 CURRENT SENSING RELAY	<i>AB</i>	
U7	U	ELEC METER NO1 <i>SPARE</i>		
U8	U	ELEC METER NO2 <i>SPARE</i>		
AO1	A	SPARE ANALOGUE OUTPUT		
AO2	A	SPARE ANALOGUE OUTPUT		
AO3	A	SPARE ANALOGUE OUTPUT		
AO4	A	SPARE ANALOGUE OUTPUT		

EXCHEQUER COURT, LONDON

CHECKLIST

PROJECT: 1286**OUTSTATION: 3RD MCC 01****LOCATION: CONTROLLER C10 BOTTOM SLOT****TYPE: JACE TRIDIUM 444E****UNIVERSAL INPUTS:****REV:1**

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
D1	D	SPARE DIGITAL OUTPUT		
D2	D	SPARE DIGITAL OUTPUT		
D3	D	SPARE DIGITAL OUTPUT		
D4	D	SPARE DIGITAL OUTPUT		
D5	D	SPARE DIGITAL OUTPUT		
D6	D	SPARE DIGITAL OUTPUT		
D7	D	SPARE DIGITAL OUTPUT		
D8	D	SPARE DIGITAL OUTPUT		

EXCHEQUER COURT, LONDON

CHECKLIST

PROJECT: 1286**OUTSTATION: 3RD MCC 01****LOCATION: CONTROLLER C10 BOTTOM SLOT****TYPE: JACE TRIDIUM 444E****UNIVERSAL INPUTS:****REV:1**

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
U1	U	SUMP PUMP ALARM <i>SPARE</i>		
U2	U	FIRE ALARM STATUS	<i>AB</i>	
U3	U	SPARE UNIVERSAL INPUT		
U4	U	SPARE UNIVERSAL INPUT		
U5	U	SPARE UNIVERSAL INPUT		
U6	U	SPARE UNIVERSAL INPUT		
U7	U	SPARE UNIVERSAL INPUT		
U8	U	SPARE UNIVERSAL INPUT		
AO1	A	SPARE ANALOUGE OUTPUT		
AO2	A	SPARE ANALOUGE OUTPUT		
AO3	A	SPARE ANALOUGE OUTPUT		
AO4	A	SPARE ANALOUGE OUTPUT		

CONTRACT NAME, LOCATION

CHECKLIST

CHECK LIST**PROJECT:1286****OUTSTATION: Level 5****LOCATION: CONTROLLER C11 TOP SLOT****TYPE:JACE TRIDIUM 444E****UNIVERSAL INPUTS:****REV:B**

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
D1	D	EXTRACT FAN EF5/01 ENABLE	AB	
D2	D	EXTRACT FAN EF5/02 ENABLE	AB	
D3	D	EXTRACT FAN EF5/03 ENABLE	AB	
D4	D	EXTRACT FAN EF5/04 ENABLE	AB	
D5	D	EXTRACT FAN EF5/05 ENABLE	AB	
D6	D	EXTRACT FAN EF5/06 ENABLE	AB	
D7	D	SPARE DIGITAL ENABLE		
D8	D	SPARE DIGITAL ENABLE		

CONTRACT NAME, LOCATION

CHECKLIST

PROJECT:1286**OUTSTATION:** Level 5.**LOCATION: CONTROLLER C11 TOP SLOT****TYPE:JACE TRIDIUM 444E****UNIVERSAL INPUTS:****REV:B**

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
U1	U	EF5/01 CURRENT SENSING RELAY	AB	
U2	U	EF5/02 CURRENT SENSING RELAY	AB	
U3	U	EF5/03 CURRENT SENSING RELAY	AB	
U4	U	EF5/04 CURRENT SENSING RELAY	AB	
U5	U	EF5/05 CURRENT SENSING RELAY	AB	
U6	U	EF5/06 CURRENT SENSING RELAY	AB	
U7	U	ELEC METER NO1		
U8	U	ELEC METER NO2 DBAS Level 5	AB	
AO1	A	SPARE ANALOGUE OUTPUT		
AO2	A	SPARE ANALOGUE OUTPUT		
AO3	A	SPARE ANALOGUE OUTPUT		
AO4	A	SPARE ANALOGUE OUTPUT		

Part.....	5
Section.....	1
Page.....	3

CONTRACT NAME, LOCATION

CHECKLIST

PROJECT:1286**LOCATION: CONTROLLER C11 BOTTOM SLOT****UNIVERSAL INPUTS:****OUTSTATION:****TYPE:JACE TRIDIUM 444E****REV:B**

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
D1	D	SPARE DIGITAL OUTPUT	<i>[Red]</i>	
D2	D	SPARE DIGITAL OUTPUT		
D3	D	SPARE DIGITAL OUTPUT		
D4	D	SPARE DIGITAL OUTPUT		
D5	D	SPARE DIGITAL OUTPUT		
D6	D	SPARE DIGITAL OUTPUT		
D7	D	SPARE DIGITAL OUTPUT		
D8	D	SPARE DIGITAL OUTPUT		

CONTRACT NAME, LOCATION

CHECKLIST

PROJECT:1286**OUTSTATION:****LOCATION: CONTROLLER C11 BOTTOM SLOT****TYPE:JACE TRIDIUM 444E****UNIVERSAL INPUTS:****REV:B**

POINT	BLOCK TYPE D = DIGITAL A = ANALOGUE	DESCRIPTION	CHECKED	
			ICS	CLIENT
U1 9	U	SUMP PUMP ALARM SPARE		
U2 10	U	SPARE UNIVERSAL INPUT Fire Alarm		AB
U3 11	U	SPARE UNIVERSAL INPUT		
U4 12	U	SPARE UNIVERSAL INPUT Elect Motor UPS Levels		AB
U5 13	U	SPARE UNIVERSAL INPUT		
U6 14	U	SPARE UNIVERSAL INPUT		
U7 15	U	SPARE UNIVERSAL INPUT		
U8 16	U	SPARE UNIVERSAL INPUT		
A05	A	SPARE ANALOGUE OUTPUT		
A06	A	SPARE ANALOGUE OUTPUT		
A07	A	SPARE ANALOGUE OUTPUT		
A08	A	SPARE ANALOGUE OUTPUT		

7

COMMISSIONING FILE

SECTION 7

HANOVER DOCUMENT

Integrated Control Systems Ltd.		Project, Location		
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.: (CON1286)	Rev0112/02/09			
Description	Off Site	On Site	Accepted	Comments
DESCRIPTION OF OPERATION 3rd Floor Extract Fans EF3/01, EF3/02, EF3/03, EF3/04, EF3/05 and EF3/06 <p>Level 3 is served by 6 extract fans, EF3/01, EF3/02, EF3/03, EF3/04, EF3/05 and EF3/06. The fans are powered and controlled via the 3rd floor MCC01 control panel. The fans extract air from the 3rd floor office area.</p> Automatic Operation <p>The 3rd floor office extract fans are enabled by the BMS 3rd floor time clock.</p> <p>Once an enable signal is received, the BMS sends a start command to the extract fans. The BMS monitors the status of each extract fan via its associated current sensing relay. If, after initiating the start signal for the fan and after a predetermined time delay of 30 seconds, the relay does not register current, an alarm message is generated by the BMS outstation and sent to the BMS Supervisor.</p>				

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Integrated Control Systems Ltd.		Project, Location		
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.: (CONT286)				Rev0112/02/09
Description	Off Site	On Site	Accepted	Comments
Shutdown When the extract fans are no longer required to operate, they will be configured as follows: - <ul style="list-style-type: none">• EF3/01 extract fan• EF3/02 extract fan• EF3/03 extract fan• EF3/04 extract fan• EF3/05 extract fan• EF3/06 extract fan	Disabled	Disabled	Disabled	
Hand Operation There is no 'hand operation' associated with the plant.				
Fire System Interlock The plant will be shutdown directly by the fire alarms hard-wired interlock. The BMS monitors the fire alarm and on receipt of a fire signal, an alarm is generated at the BMS outstation and sent to the BMS Supervisor.				

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Integrated Control Systems Ltd.		Project, Location		
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.:(CON1286)				Rev0112/02/09
Description	Off Site	On Site	Accepted	Comments
<p>Safety Interlocks The following hard-wired interlocks must be intact before the extract fans are able to run:</p> <ul style="list-style-type: none"> • Fire alarm system healthy <p>Summary of Alarms The following alarms will be generated by the BMS outstation and sent to the BMS supervisor:</p> <ul style="list-style-type: none"> • 3rd floor extract fan EF3/01 failure, as detected by current sensing relay. • 3rd floor extract fan EF3/02 failure, as detected by current sensing relay. • 3rd floor extract fan EF3/03 failure, as detected by current sensing relay. • 3rd floor extract fan EF3/04 failure, as detected by current sensing relay. • 3rd floor extract fan EF3/05 failure, as detected by current sensing relay. • 3rd floor extract fan EF3/06 failure, as detected by current sensing relay. 				

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Integrated Control Systems Ltd.

Project, Location

B.M.S WITNESS / HANDOVER SHEET

Job Ref.: (CON1286)

Rev0112/02/09

Description	Off Site	On Site	Accepted	Comments
<p>5th Floor Extract Fans EF5/01, EF5/02, EF5/03, EF5/04, EF5/05 and EF5/06</p> <p>Level 5 is served by 6 extract fans, EF5/01, EF5/02, EF5/03, EF5/04, EF5/05 and EF5/06. The fans are powered and controlled via the 5th floor MCC01 control panel. The fans extract air from the 5th floor office area.</p> <p>Automatic Operation</p> <p>The 5th floor office extract fans are enabled by the BMS 5th floor time clock.</p> <p>Once an enable signal is received, the BMS sends a start command to the extract fans. The BMS monitors the status of each extract fan via its associated current sensing relay. If, after initiating the start signal for the fan and after a predetermined time delay of 30 seconds, the relay does not register current, an alarm message is generated by the BMS outstation and sent to the BMS Supervisor.</p>				

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Integrated Control Systems Ltd.		Project, Location		
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.: (CON1286)				Rev01 12/02/09
Description	Off Site	On Site	Accepted	Comments
Shutdown When the extract fans are no longer required to operate, they will be configured as follows:- <ul style="list-style-type: none"> • EF5/01 extract fan Disabled • EF5/02 extract fan Disabled • EF5/03 extract fan Disabled • EF5/04 extract fan Disabled • EF5/05 extract fan Disabled • EF5/06 extract fan Disabled 				
Hand Operation There is no 'hand operation' associated with the plant.				
Fire System Interlock The plant will be shutdown directly by the fire alarms hard-wired interlock. The BMS monitors the fire alarm and on receipt of a fire signal, an alarm is generated at the BMS outstation and sent to the BMS Supervisor.				

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Integrated Control Systems Ltd.		Project, Location			
B.M.S WITNESS / HANDOVER SHEET					
Job Ref.: (CON1286)	Rev0112/02/09				
Description	Off Site	On Site	Accepted	Comments	
<p>Safety Interlocks The following hard-wired interlocks must be intact before the extract fans are able to run: -</p> <ul style="list-style-type: none"> • Fire alarm system healthy <p>Summary of Alarms The following alarms will be generated by the BMS outstation and sent to the BMS supervisor: -</p> <ul style="list-style-type: none"> • 5th floor extract fan EF5/01 failure, as detected by current sensing relay. • 5th floor extract fan EF5/02 failure, as detected by current sensing relay. • 5th floor extract fan EF5/03 failure, as detected by current sensing relay. • 5th floor extract fan EF5/04 failure, as detected by current sensing relay. • 5th floor extract fan EF5/05 failure, as detected by current sensing relay. • 5th floor extract fan EF5/06 failure, as detected by current sensing relay. 					
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Integrated Control Systems Ltd.					Project, Location
B.M.S WITNESS / HANDOVER SHEET					
Job Ref.: (CON1286)					Rev0112/02/09
Description	Off Site	On Site	Accepted	Comments	
Level 3 & 5 General Office Supply VAVs					
The office supply VAVs are controlled via local controllers, namely the MNL V2R. This is a stand-a-lone intelligent DDC controller, which is connected on to the LON communications network. The controllers are mounted directly on the supply VAVs chassis's. Each VAV box is provided with a volume control damper and VAV box airflow grid. The VAVs are located within the ceiling void of the 3 rd and 5 th floors.					
Automatic Operation When an occupancy signal is present, the VAVs will be enabled. A VAV airflow grid, located in the flow path of the air volume control damper, is then used to modulate the volume control damper, to maintain the VAVs calculated flow setpoint.					
Shutdown At the end of the occupancy period the system will configure as follows: - • Supply volume control damper	Closed.				

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Integrated Control Systems Ltd.				Project, Location
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.: (CON1286)		Rev01 12/02/09		
Description	Off Site	On Site	Accepted	Comments
<p>Hand Operation There is no hand operation control associated with the apartment VAVs.</p> <p>Fire System Interlock The VAVs will be shutdown when the fire alarms software interlock is received. The BMS monitors the fire alarm and on receipt of a fire signal the VAVs are shutdown via the network, an alarm is generated at the BMS outstation and sent to the BMS supervisor.</p> <p>Fireman's Switch The VAVs will be shutdown by the fireman's switch's hard-wired interlock with the associated fresh air AHU's MCP is received. The BMS monitors the fireman's switch and on receipt of an "Off" or "Extract" signal the VAVs are shutdown, an alarm is generated at the BMS outstation and sent to the BMS supervisor.</p>				

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Integrated Control Systems Ltd.		Project, Location		
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.: (CON1286)		Rev0112/02/09		
Description	Off Site	On Site	Accepted	Comments
<p>Safety Interlocks The following software interlocks must be intact before the above plant is able to run: -</p> <ul style="list-style-type: none"> • Fire alarm healthy. • Fireman's switch in "Auto". <p>Summary of Alarms There are no alarms associated with the VAVs.</p> <p>Consumption Metering The BMS will calculate the following readings for each meter:-</p> <ul style="list-style-type: none"> • Current consumption rate • Daily consumption rate • Weekly consumption rate • Monthly consumption rate • Yearly consumption rate <p>These readings can be viewed via the BMS Supervisor.</p>				

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Integrated Control Systems Ltd.	Project, Location			
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.: (CON1286)	Rev0112/02/09			
Description	Off Site	On Site	Accepted	Comments
<p>3rd Floor MCC01 Control Panel</p> <p>The following points will be monitored via a pulsed input: -</p> <ul style="list-style-type: none"> • Electricity meter no.1. • Electricity meter no.2. <p>5th Floor MCC01 Control Panel</p> <p>The following points will be monitored via a pulsed input: -</p> <ul style="list-style-type: none"> • Electricity meter no.1. • Electricity meter no.2. <p>Miscellaneous Monitoring</p> <p>The following points will be monitored by the BMS and displayed on the BMS supervisor. Alarms will be generated at the BMS outstation and sent to the BMS Supervisor: -</p>				

Signed for ICS.....	Signed for (CLIENT).....
Page 10 of 11	Signed for (CONSULTANT).....

Integrated Control Systems Ltd.		Project, Location		
B.M.S WITNESS / HANDOVER SHEET				
Job Ref.: (CON1286)				Rev0112/02/09
Description	Off Site	On Site	Accepted	Comments
3rd Floor MCC01 Control Panel <ul style="list-style-type: none"> • Sump pump alarm. • Fire alarm status. 				
5th Floor MCC01 Control Panel <ul style="list-style-type: none"> • Sump pump alarm. • Fire alarm status. 				

Signed for ICS.....	Signed for (CLIENT).....
Page 11 of 11	Signed for (CONSULTANT).....



BMS COMPLETION CERTIFICATE

SITE: Exchequer Court floors 3&5

CONTRACT No: 1286

DATE: _____

The BMS system at the above-mentioned project is agreed to have been completed satisfactorily, as witnessed by the following representatives present, with the following items outstanding.

Item	Intended Action Date	Date Actioned

On Behalf of Consultant

Name..... Signature..... Date.....

On Behalf of Client

Name..... Signature..... Date.....

On Behalf of Integrated Control Systems Limited

Name..... Signature..... Date.....



Unit 2 Millars Business Centre, Fishponds Close, Wokingham, Berkshire, RG41 2TZ
Tel> 0118 9772 226 Fax> 0118 9774999



BMS TRAINING CERTIFICATE

SITE: Exchequer court floors 3&5

CONTRACT No: 1286

DATE: _____

The following operatives have been trained on the specific site set-up, including plant familiarisation and the operation of the building management system at the above-mentioned project.

Name	Signed

On Behalf of Integrated Control Systems Limited

Name..... Signature..... Date.....



Unit 2 Millars Business Centre, Fishponds Close, Wokingham, Berkshire, RG41 2TZ
Tel> 0118 9772 226 Fax> 0118 9774999