

**THIS FOLDER WAS CHECKED BY
ARUP ON**

21.3.03

**The checking process was to ensure that 3 identical
sets of each Volume of the Operating and
Maintenance Manuals existed**

**5-7 CARLTON GARDENS
LONDON SW1**

**OPERATING & MAINTENANCE
INSTRUCTIONS**

**for the
BMS**

VOLUME 2

2.4 – Section I

*Collated By :
Commissioning Management Ltd
5, St Peters Court
Colchester
Essex
C01 1WD*

*Tel : 01206 761911
Fax : 01206 761932*

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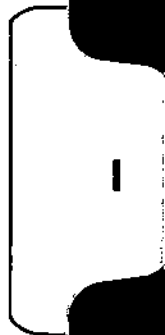
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ITEM	GENERAL OPERATING INSTRUCTIONS	GENERAL MAINTENANCE INSTRUCTIONS	SPECIFIC SUPPLIER LITERATURE
AHU01 (East Office Ventilation) - System 1	D.1.2	E.2.8 / E.2.9	N/A
AHU02 (West Office Ventilation) - System 2	D.1.3	E.2.8 / E.2.9	N/A
AHU03 (Office Core Lobby & Toilet Ventilation) - System 3	D.1.4	E.2.8 / E.2.9	N/A
Basement Staffroom, Mailroom & Lift Motor Room Ventilation System 4	D.1.5	E.2.8 / E.2.9	N/A
Basement WCs and Refuse Room Extract Fans - System 5	D.1.6	E.2.8 / E.2.9	N/A
Car Park Ventilation & Smoke Fans - System 6	D.1.7	E.2.8 / E.2.9	N/A
BMS/Security Room Ventilation - System 7	D.1.8	E.2.8 / E.2.9	N/A
Basement Plant West Extract - System 8	D.1.9	E.2.8 / E.2.9	N/A
Basement Plant East Extract - System 9	D.1.10	E.2.8 / E.2.9	N/A
Residential Staircase Pressurisation Fans - System 10	D.1.11	E.2.8 / E.2.9	N/A
Office Staircase Pressurisation Fans - System 11	D.1.12	E.2.8 / E.2.9	N/A
Fire Fighting Staircase Pressurisation Fans - System 12	D.1.13	E.2.8 / E.2.9	N/A
Workshop Ventilation - System 13	D.1.14	E.2.8 / E.2.9	N/A
Boiler Room Combustion Air - System 14	D.1.15	E.2.8 / E.2.9	N/A
East Office Pressurisation Relief Fans - System 20	D.1.16	E.2.8 / E.2.9	N/A
West Office Pressurisation Relief Fans - System 21	D.1.17	E.2.8 / E.2.9	N/A
Lower Ground Floor (East) Controls - System 30	D.1.18	E.2.8 / E.2.9	N/A
Ground Floor (North) Controls - System 31	D.1.19	E.2.8 / E.2.9	N/A
First Floor (East) Controls - System 32	D.1.20	E.2.8 / E.2.9	N/A
Second Floor (East) Controls - System 33	D.1.21	E.2.8 / E.2.9	N/A
Third Floor (East) Controls - System 34	D.1.22	E.2.8 / E.2.9	N/A
Fourth Floor (East) Controls - System 35	D.1.23	E.2.8 / E.2.9	N/A
Fifth Floor (East) Controls - System 36	D.1.24	E.2.8 / E.2.9	N/A
Lower Ground Floor (West) Controls - System 37	D.1.25	E.2.8 / E.2.9	N/A
Ground Floor (South) Controls - System 38	D.1.26	E.2.8 / E.2.9	N/A
First Floor (West) Controls - System 39	D.1.27	E.2.8 / E.2.9	N/A

Second Floor (West) Controls - System 40	D.1.28	E.2.8 / E.2.9	N/A
Third Floor (West) Controls - System 41	D.1.29	E.2.8 / E.2.9	N/A
Fourth Floor (West) Controls - System 42	D.1.30	E.2.8 / E.2.9	N/A
Fifth Floor (West) Controls - System 43	D.1.31	E.2.8 / E.2.9	N/A
Primary Boiler Plant - System 100	D.1.32	E.2.8 / E.2.9	N/A
FCU Secondary LTHW Circuit - System 101	D.1.33	E.2.8 / E.2.9	N/A
AHU Secondary LTHW Circuit - System 102	D.1.34	E.2.8 / E.2.9	N/A
DHWS Calorifier LTHW Circuit - System 103	D.1.35	E.2.8 / E.2.9	N/A
Radiator & Landlord's LTHW Circuit - System 104	D.1.36	E.2.8 / E.2.9	N/A
Primary Chilled Water Plant - System 200	D.1.37	E.2.8 / E.2.9	N/A
FCU Secondary CHW Circuit - System 201	D.1.38	E.2.8 / E.2.9	N/A
AHU Secondary CHW Circuit - System 202	D.1.39	E.2.8 / E.2.9	N/A
Residential Controls - Systems 300 to 305	D.1.40	E.2.8 / E.2.9	N/A
Public Health Monitoring - System 400	D.1.41	E.2.8 / E.2.9	N/A
Electrical Monitoring - System 500	D.1.42	E.2.8 / E.2.9	N/A
Fire Operation - System 999	D.1.43	E.2.8 / E.2.9	N/A



I COMMISSIONING & TESTING RECORDS

**5 – 7 Carlton Gardens
London SW1**

**Factory Acceptance Test
Report – Package 6700**

**Motor Control Centres
MCC B/1 & MCC B/2
and
Associated BMS Software**

**Prepared by T R Coleman
CML International Ltd.
5 St Peters Court
Colchester
Essex CO1 1WD
November 1998**

Doc. Ref.: TRC/ I98008/6700/FAT1/2

Objective

To witness and validate the factory testing of Motor Control Centres Ref. MCC B/1 and MCC B/2, and associated BMS software strategies.

Test Location:-

Synchronised Systems Ltd
Horton Road
Colnbrook
Slough
Berkshire SL3 0AT

Dates

MCC B/2	04 November 1998
MCC B/1	12 November 1998

Personnel

David Pritchard	-	Ove Arup (4 th November 98)
Simon Barden	-	Ove Arup (12 th November 98)
Martin Biss	-	Synchronised Systems Ltd
Sue Owen	-	Synchronised Systems Ltd
Trevor Coleman	-	CML International Ltd

Equipment Details

Customer	:	Mace Ltd
Customer Order No.	:	not known
Sync. Systems. Ref.	:	S98507
Drawings	:	S98507-00/-24A (MCC B/1)
	:	S98507-30/-48 (MCC B/2)

Documentation

The following documentation available at time of test, is included in the Appendix:-

- (i) Test / Commission Method Statement (Generic) Ref: 6700/1A 8/7/98
- (ii) Control Panel Test Certificate MCC B/2 – 22/10/98 Sheets 1-5
- (iii) Control Panel Test Certificate MCC B/1 – 30/10/98 Sheets 1-8

(iv) System descriptive narratives for MCC B/1 Systems:-

5.5.4.28 Primary Boiler Plant – System 100

5.5.4.29 FCU Secondary LTHW Circuit – System 101

5.5.4.30 AHU Secondary LTHW Circuit – System 102

5.5.4.31 DHWS Calorifier LTHW Circuit – System 103

5.5.4.32 Radiator & Landlord's LTHW Circuit – System 104

5.5.4.33 Primary Chilled Water Plant – System 200

5.5.4.34 FCU Secondary CHW Circuit – System 201

5.5.4.35 AHU Secondary CHW Circuit – System 202

(v) System descriptive narratives for MCC B/2 Systems:-

5.5.4.2 AHU01 (East Office Ventilation) – System 1

5.5.4.8 BMS/Security Room Ventilation – System 7

5.5.4.11 Workshop Ventilation – System 13

Descriptions

Motor Control Centre MCC B/1

This MCC provides motor control and protection facilities, and BMS control equipment, associated with the central LTHW and Chilled Water plants.

Contained within this MCC are starters for the Primary and Secondary LTHW & ChW pumps and Trend IQ Controllers containing the software strategies as described in the above narratives.

Motor Control Centre MCC B/2

This MCC provides motor control and protection facilities, and BMS control equipment for the East & West Office Supply & Extract Ventilation systems, which serve office areas from the lower ground to the fifth floors.

Contained within this MCC are starters for the Workshop and BMS/Security Room Ventilation Fans, contactors and MCBs for the remote mounted Inverter Drives controlling the Office supply and extract fans, and Trend IQ Controllers containing the software strategies as described in the above narratives.

Tests and Inspections

Both MCCs were inspected and checked against the drawings and specification. Insulation and flash testing of the power circuits and bus bar assemblies, were not witnessed, having previously been carried out by the manufacturer, prior to loading the software.

The witness testing of these two motor control centres, principally comprised the checking and functional verification of the individual BMS software and hard wired control strategies, for each System against the performance specifications.

Input/output devices were simulated by switches and meters, set points and 'measured values were forced to exercise all functions.

It is recorded that only the software strategy for the East Office Ventilation was checked, since it is generic for the West Office, comments will be applied to both systems.

The results of all the tests and checks are recorded on the documentation, included in the Appendix.

Test Documentation

Included within the Appendix are completed 'Test Record Sheets' for the two MCCs, which record settings, and test and check data.

Comment/Conclusion

The test programme was successful, in general snag items were corrected "on the hoof". Included in the Appendix are copies of the narratives with comments, together with a list of snag items raised by Ove Arup on MCC B2, which should be read in conjunction with the following observations..

Observations MCC B/2

- Terminations on MCC incoming isolator to be checked to ensure that they are capable of accepting the incoming cable/lugs.
- Fan speed indicators, ideally should be scaled to read % commissioned speed, rather than frequency.
- Fan speed control strategy may need amendment to suit partial occupation pattern.
- Cabling between live incoming side of isolator and 'Controls Isolator' should be double insulated.
- Synchronised Systems Ltd. Identification label detailing job reference and drawings to be affixed in a prominent position inside both MCCs.
- Ensure consistency in label references
- Frost T'stat arrangement is not 'fail safe'.
- Humidifier/Supply Fan interlock to be hard wired.
- Is discrimination/fault clear capability of the MCBs adequate? when compared to incoming supply sc. protection.
- Ensure 'neutral bar' connections are fully shrouded

- Label required to state that a fuse is fitted within "Controls Isolator".

Observations MCC B/1

- Label required to state that a fuse is fitted within "Controls Isolator".
- Terminations on MCC incoming isolator to be checked to ensure that they are capable of accepting the incoming cable/lugs.
- Is discrimination/fault clear capability of the MCBs adequate? when compared to incoming supply sc. protection.
- Chiller sequencer 'Power On' lamp to read 'Enabled'
- Check that Condenser Pump operating sequence is acceptable to Chiller manufacturer.
- Chiller sequencer to stop when both secondary pumps are in a failed state; the 'Sec. Cooling ' demand signal to be inhibited, this philosophy to be applied to 'Htg Sec. Pumps.
- Condenser Water Press. Cct. 'Power On' signal faulty.
- Ensure 'neutral bar' connections are fully shrouded.
- Boiler operation: implement strategies paras 57/58 (page 251)
- Boiler safety circuit: Correct latch in circuit to prevent auto reset.(relays 715,716)
- OAP to confirm requirement for reset buttons adjacent to Panic buttons.
- FCU pumps: rationalise circuit with relays 716, 716A,B,C, to create strategy as Clause 71.
- Remove relay base 1432 and all unwanted connections.
- Implement Clause 84,- software reset to be added

Test Equipment

- Clare Flash Tester, Type A203C/213/F serial no.81301
-

Appendices

- Test Commission Method Statement (Generic) Ref:6700/1A 8/7/98
 - Control Panel Test Certificate MCC B/2 – 22/10/98 Sheets 1-5
 - Control Panel Test Certificate MCC B/1 – 30/10/98 Sheets 1-8
 - System descriptive narratives for MCC B/1 Systems:-
 - 5.5.4.28 Primary Boiler Plant – System 100
 - 5.5.4.29 FCU Secondary LTHW Circuit – System 101
 - 5.5.4.30 AHU Secondary LTHW Circuit – System 102
 - 5.5.4.31 DHWS Calorifier LTHW Circuit – System 103
 - 5.5.4.32 Radiator & Landlord's LTHW Circuit – System 104
 - 5.5.4.33 Primary Chilled Water Plant – System 200
 - 5.5.4.34 FCU Secondary CHW Circuit – System 201
 - 5.5.4.35 AHU Secondary CHW Circuit – System 202
 - System descriptive narratives for MCC B/2 Systems:-
 - 5.5.4.2 AHU01 (East Office Ventilation) – System 1
 - 5.5.4.8 BMS/Security Room Ventilation – System 7
 - 5.5.4.11 Workshop Ventilation – System 13
- OAP Snag List by DP 4/11/98

5-7 Carlton Gardens	Package Ref : 6700
Test / Commission Method	Package Title : B.M.S
Contractor : Synchronised Systems	
Subject/System(s) : Motor Control Centres	
Works Tests	

Item	Description	Checked
1.0	Introduction <i>The Purpose of the MCC Works test is to ensure as far as practically possible the control system as Designed and constructed is completed in a quality manner with no errors or equipment missing from the construction and complies with the relevant specification. + SAFETY STANDARDS/REQUIREMENTS.</i>	
2.0	Prerequisites To Procedure 2.1 Completion of construction. 2.2 Latest Issue Drawings 2.3 Callibrated Instruments	
3.0	Design Parameters <i>Specification references to be included later</i> *	
4.0	Reference Documents/Drawings <i>Drawing No to be included later</i> *	
5.0	Pre-Start Checks 1. <i>Our manufacturing Workshop and Stores operate a detailed quality inspection system where all components are checked when received by the Stores, and as the equipment is being installed within the Control Panels, similar to the procedures laid down in BS 5750.</i> 2. <i>On completion of a Control Panel a complete visual inspection is carried out by our Inspector to ensure quality of workmanship is up to our high standards, and that all equipment is fixed and wired as indicated on detailed construction Drawings.</i> 3. <i>An independent operator carries out a tightness check on all connections, including Busbars, Contactors, Starters, Pilot lights, etc. This is to ensure that additional terminal pressure is taken up following conductor compression which takes place during the manufacturing period.</i> 4. <i>Our Inspectors check all component parts to ensure correct Contactor sizes, Fuse sizes, Coil voltages, etc., and cross reference all information with construction Drawings.</i>	

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Revision :	B	Date :	8/7/98	Approved By:	

5-7 Carlton Gardens	Package Ref. : 6700
Test / Commission Method	Package Title : B.M.S.
Contractor : Synchronised Systems	
Subject/System(s) : Motor Control Centres	
Works Tests	

Item	Description	Checked
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6.0	<p>Commission / Test Procedures</p> <p>WORKSHOP CONTROL PANEL TEST PROCEDURE</p> <ol style="list-style-type: none"> On completion of the physical inspection, the Panel is connected to a test rig where all Control Cables are interconnected to enable a complete simulation to take place of all interlocking safety functions, etc. It is our Company practice to invite the Client to our premises at this point to witness the operation of the Control Panel to ensure that we have interpreted the requirements of the Specification correctly, and to enable us to demonstrate the operation of the entire system. As well as control function checks, a power test is also carried out. This includes checking correct power operation of the Contactors, Fuses, Isolators, external terminations, etc., with detailed phase checks through all components (using a Multi-Meter). Where Ammeters and Current Transformers are fitted, an injection test is carried out to ensure correct ratios of Transformers, and correct readings on Ammeters, etc (using a Clare Current Tester). Similar tests are carried out on Voltmeters by varying the input voltage to the Control Panel to ensure correct readings, etc. Where B.M.S. Outstations are installed Potentiometers or Resistance Bulbs are connected via the test rig to enable temperature modulation and therefore, precommissioning of the controls, including setpoints, differentials, integration ratios sequence switching, etc, to be fully demonstrated. Each point is to be checked for correct operation, the total number of input and outputs as per the attached schedules. (See sheets DO/A, DI, and AI). + GRAPHICS WHERE AVAILABLE. Where other Control Panels are inter-connected, these would be wired together with the Panel under test to ensure correct compatibility and inter-Panel operation. Other simulation includes operation of Starter Overloads using the manual trip switch. Overloads will be set to trip at approximately 100% of the Motor full load running currents. Where the full load currents are not known the recommendations, as laid down in BS 5486, would be applied. It is also the responsibility of our Inspector to double check the electrical and mechanical design, as laid down in the Contract Specification, to ensure complete compliance. 	
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Section Ref.: 6700/1A	Page No.: 2 of 4	Prepared By: R.SHAW
Revision : B	Date : 8/7/98	Approved By:

S-7 Carlton Gardens	Package Ref. : 6700
Test / Commission Method	Package Title : B.M.S
Contractor : Synchronised Systems	
Subject/System(s) : Motor Control Centres	
Works Tests	

Item	Description	Checked
	<p>8. The Control Panel is then subjected to a 2,000 volt flash test (using a Clare F.T.) to check between phase/phase/phase/ neutral, phase/earth. This test is held for approximately ^{1 min} 30 seconds to ensure tracking does not occur. 500 Volt Megohms readings are also taken, and noted on the Test Certificate. — INSULATION RESISTANCE TEST.</p> <p>9. On completion of factory tests, the Client is asked to sign the witnessed section of the Test Certificate, and copies are then issued to the Client.</p> <p>10. Finally, a further visual inspection is carried out on the Control Panel to ensure no damage has occurred to the paint work during manufacture, and checks made to ensure lifting eyes are tightened, and that the Unit is ready for despatch. * DETAIL PROTECTION.</p>	
7.0	Interface Procedures N/A.	
8.0	Documentation 8.1 Wiremans Check Sheet 8.2 Motor Starter Sheet 8.3 Power Feeds Sheet 8.4 Check List Sheet 8.5 Earth Test Sheet 8.6 Site Test Sheet All Above documents are prefixed by the Synchronised System contract number and MCC reference number	
9.0	Demonstration Procedures 9.1 The demonstration test shall consist of items under section 6 sub-sections 1- 9.2. Notification shall be given in writing to Mace prior to the tests and Where practacally possible 7 days notice shall be given. 7	

Section Ref.: 6700/1A	Page No.: 3 of 4	Prepared By: R.SHAW
Revision : B	Date : 8/7/98	Approved By:

5-7 Carlton Gardens	Package Ref: 6700
Test/Commission Method	Package Title: BMS
Contractor: Synchronised Systems	
Subject/System(s) : Motor Control Centres	
Works Tests	

Item	Description	Checked
10.0	<p>Instrumentation + MULTI METER.</p> <p>Flash Tester CLARE MODEL No A203C/213/F SERIAL No 81301</p> <p>CLARE MODEL No A203B SERIAL No 82081/A1</p> <p>— CALIBRATION CERTIFICATES TO BE MADE AVAILABLE.</p>	
11.0	<p>Staffing</p> <p><i>Our Workshop Manager Mr Les Aubrey is responsible for the construction, test, and witness of the MCC's, where deemed necessary his nominated employees shall carry out such tests to comply with the procedures laid down.</i></p>	
12.0	<p>Safety Aspects And Permit To Work Requirements</p> <p><i>All panel works and test shall be carried out by a nominated competent person, where live test / panel works are involved the respective areas shall be cordoned off and notices posted in accordance with the current health and safety requirements.</i></p>	

Section Ref.:	6700/1A	Page No.:	4 of 4	Prepared By:	R.SHAW
Revision :	B	Date :	8/7/98	Approved By:	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE	FOR SYNCHRONISED SYSTEMS	DATE	30-Oct-98
WITNESSED	FOR	DATE	

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE	FOR SYNCHRONISED SYSTEMS	DATE	30-Oct-98
WITNESSED	FOR	DATE	

MOTOR STARTERS.

COMPLIANCE

Motor Ref.	PRIMARY HEATING PUMP No.1 100/PPC/001 LOW SPEED	Overload Device.	LR2.D13.12
		Contacto(r)s).	LC1.D09.10U5
		Overload Range	5.5 - 8A
		Overload Setting.	6.6A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size.	C60HD310 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C319	C.T. Ratio.	N/A

[illegible]

Motor Ref.		Overload Device	LR2.D13.12
PRIMARY HEATING PUMP No.1 100/PPC/001 HIGH SPEED		Contacto(r)s	LC1.D09.10U5
		Overload Range	5.5 - 8A
		Overload Setting	6.6A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD310 ISO 32A
		Ammeter Scale	N/A
		C.T. Ratio	N/A
Starter Ref.	C320		

[illegible]

Motor Ref.	PRIMARY HEATING PUMP No.2 100/PPC/002 LOW SPEED	Overload Device	LR2.D13.12
		Contacto(r)s	LC1.D09.10U5
		Overload Range	5.5 - 8A
		Overload Setting	6.6A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD310 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C334	C.T. Ratio	N/A

[illegible]

Motor Ref.	PRIMARY HEATING PUMP No.2 100/PPC/002 HIGH SPEED	Overload Device	LR2.D13.12
		Contactora(s)	LC1.D09.10U5
		Overload Range	5.5 - 8A
		Overload Setting	6.6A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD310 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C335	C.T. Ratio	N/A

[illegible]

Motor Ref.		Overload Device.	LR2.D13.08
FCU SECONDARY HEATING PUMP No.1 101/SPC/001		Contactora(s).	LC1.D09.10U5
		Overload Range.	2.5 - 4A
		Overload Setting.	2.55A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	C60HD306 ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C819	C.T. Ratio.	N/A

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE	FOR SYNCHRONISED SYSTEMS		DATE 30-Oct-98
WITNESSED	FOR		DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.	FCU SECONDARY HEATING PUMP No.2 101/SPC/002	Overload Device	LR2.D13.08
		Contactor(s)	LC1.D09.10U5
		Overload Range	2.5 - 4A
		Overload Setting	2.55A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD306 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C829	C.T. Ratio	N/A

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Motor Ref.	AHU SECONDARY HEATING PUMP No.1 102/SPC/001	Overload Device	LR2.D13.08
		Contactor(s)	LC1.D09.10U5
		Overload Range	2.5 - 4A
		Overload Setting	2.55A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD306 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C919	C.T. Ratio	N/A

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Motor Ref.	AHU SECONDARY HEATING PUMP No.2 102/SPC/002	Overload Device	LR2.D13.08
		Contactor(s)	LC1.D09.10U5
		Overload Range	2.5 - 4A
		Overload Setting	2.55A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD306 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C929	C.T. Ratio	N/A

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Motor Ref.	DHWS CALORIFIER LTHW CIRCUIT PUMP No.1 103/SPC/001	Overload Device	LR2.D13.06
		Contactor(s)	LC1.D09.10U5
		Overload Range	1 - 1.6A
		Overload Setting	1.15A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD302 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C1018	C.T. Ratio	N/A

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Motor Ref.	DHWS CALORIFIER LTHW CIRCUIT PUMP No.2 103/SPC/002	Overload Device	LR2.D13.06
		Contactor(s)	LC1.D09.10U5
		Overload Range	1 - 1.6A
		Overload Setting	1.15A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD302 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C1025	C.T. Ratio	N/A

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SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE	FOR SYNCHRONISED SYSTEMS		DATE 30-Oct-98
WITNESSED	FOR		DATE

MOTOR STARTERS.

Motor Ref.	Overload Device	
RADIATOR & LANDLORDS LTHW CIRCUIT PUMP No.1 104/SPC/001	Contactor(s)	LR2.D13.X6
	Overload Range	LC1.D09.10U5
	Overload Setting	1.25 - 2A
	Cable Size	1.55A
	Terminal Size	2.5mm
	Starter Fuse /MCB Type/Size	4mm
	Ammeter Scale	C60HD304 ISO 32A
	C.T. Ratio	N/A
Starter Ref.	C1119	

COMPLIANCE

Motor Ref.	Overload Device	
RADIATOR & LANDLORDS LTHW CIRCUIT PUMP No.2 104/SPC/002	Contactor(s)	LR2.D13.X6
	Overload Range	LC1.D09.10U5
	Overload Setting	1.25 - 2A
	Cable Size	1.55A
	Terminal Size	2.5mm
	Starter Fuse /MCB Type/Size	4mm
	Ammeter Scale	C60HD304 ISO 32A
	C.T. Ratio	N/A
Starter Ref.	C1129	

Motor Ref.	Overload Device	
PRIMARY CHILLED WATER PUMP No.1 200/PPC/001	Contactor(s)	LR2.D23.53
	Overload Range	LC1.D25.10U5
	Overload Setting	23 - 32A
	Cable Size	23.8A
	Terminal Size	10mm / 6mm
	Starter Fuse /MCB Type/Size	10mm
	Ammeter Scale	C60HD350 ISO 63A
	C.T. Ratio	N/A
Starter Ref.	C1220	

Motor Ref.	Overload Device	
PRIMARY CHILLED WATER PUMP No.2 200/PPC/002	Contactor(s)	LR2.D23.53
	Overload Range	LC1.D25.10U5
	Overload Setting	23 - 32A
	Cable Size	23.8A
	Terminal Size	10mm / 6mm
	Starter Fuse /MCB Type/Size	10mm
	Ammeter Scale	C60HD350 ISO 63A
	C.T. Ratio	N/A
Starter Ref.	C1234	

Motor Ref.	Overload Device	
PRIMARY CONDENSER WATER PUMP No.1 200/PPC/003	Contactor(s)	LR2.D23.55
	Overload Range	LC1.D32.10U5
	Overload Setting	28 - 36A
	Cable Size	31A
	Terminal Size	16mm / 10mm
	Starter Fuse /MCB Type/Size	16mm
	Ammeter Scale	C60HD363 ISO 63A
	C.T. Ratio	N/A
Starter Ref.	C1320	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE	FOR SYNCHRONISED SYSTEMS		DATE 30-Oct-98
WITNESSED	FOR		DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.	PRIMARY CONDENSER WATER PUMP No.2 200/PPC/004	Overload Device	LR2.D23.55
		Contactor(s)	LC1.D32.10U5
		Overload Range	28 - 36A
		Overload Setting	31A
		Cable Size	16mm / 10mm
		Terminal Size	16mm
		Starter Fuse /MCB Type/Size	C60HD363 ISO 63A
		Ammeter Scale	N/A
Starter Ref.	C1334	C.T. Ratio	N/A

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Motor Ref.	FCU SECONDARY CHW CIRCUIT PUMP No.1 201/SPC/001	Overload Device	LR2.D13.16
		Contactor(s)	LC1.D18.10U5
		Overload Range	9 - 13A
		Overload Setting	11A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD316 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C1619	C.T. Ratio	N/A

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Motor Ref.	FCU SECONDARY CHW CIRCUIT PUMP No.2 201/SPC/002	Overload Device	LR2.D13.16
		Contactor(s)	LC1.D18.10U5
		Overload Range	9 - 13A
		Overload Setting	11A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	C60HD316 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C1629	C.T. Ratio	N/A

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Motor Ref.	AHU SECONDARY CHW CIRCUIT PUMP No.1 202/SPC/001	Overload Device	LR2.D13.07
		Contactor(s)	LC1.D09.10U5
		Overload Range	1.6 - 2.5A
		Overload Setting	2A
		Cable Size	2.5mm
		Terminal Size	4MM
		Starter Fuse /MCB Type/Size	C60HD304 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C1719	C.T. Ratio	N/A

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Motor Ref.	AHU SECONDARY CHW CIRCUIT PUMP No.2 202/SPC/002	Overload Device	LR2.D13.07
		Contactor(s)	LC1.D09.10U5
		Overload Range	1.6 - 2.5A
		Overload Setting	2A
		Cable Size	2.5mm
		Terminal Size	4MM
		Starter Fuse /MCB Type/Size	C60HD304 ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C1729	C.T. Ratio	N/A

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SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE	FOR SYNCHRONISED SYSTEMS		DATE 30-Oct-98
WITNESSED	FOR		DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
BOILER BANK No.1 100/BRW/001	Cable Size		2.5mm
	Terminal Size		4mm
	Fuse/MCB Type/Size		C60HD116 ISO32A
	Ammeter Scale		N/A
	C.T. Ratio		N/A
Contactor Ref.	N/A		

Ref.		Contactor(s)	N/A
BOILER BANK No.2 100/BRW/002	Cable Size		2.5mm
	Terminal Size		4mm
	Fuse/MCB Type/Size		C60HD116 ISO32A
	Ammeter Scale		N/A
	C.T. Ratio		N/A
Contactor Ref.	N/A		

Ref.		Contactor(s)	N/A
HEATING PRESSURISATION UNIT 100/PRU/001	Cable Size		2.5mm
	Terminal Size		4mm
	Fuse/MCB Type/Size		C60HD106
	Ammeter Scale		N/A
	C.T. Ratio		N/A
Contactor Ref.	N/A		

Ref.		Contactor(s)	N/A
CHILLED WATER PRESSURISATION UNIT PU02 200/PRU/001	Cable Size		2.5mm
	Terminal Size		4mm
	Fuse/MCB Type/Size		C60HD106
	Ammeter Scale		N/A
	C.T. Ratio		N/A
Contactor Ref.	N/A		

Ref.		Contactor(s)	N/A
CONDENSER WATER PRESSURISATION UNIT PU01 200/PRU/002	Cable Size		2.5mm
	Terminal Size		4mm
	Fuse/MCB Type/Size		C60HD106
	Ammeter Scale		N/A
	C.T. Ratio		N/A
Contactor Ref.	N/A		

Ref.		Contactor(s)	N/A
REFRIGERANT GAS DETECTION UNIT	Cable Size		2.5mm
	Terminal Size		4mm
	Fuse/MCB Type/Size		C60HB104
	Ammeter Scale		N/A
	C.T. Ratio		N/A
Contactor Ref.	N/A		

Ref.		Contactor(s)	
	Cable Size		
	Terminal Size		
	Fuse/MCB Type/Size		
	Ammeter Scale		
	C.T. Ratio		
Contactor Ref.			

Ref.		Contactor(s)	
	Cable Size		
	Terminal Size		
	Fuse/MCB Type/Size		
	Ammeter Scale		
	C.T. Ratio		
Contactor Ref.			

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE.	FOR SYNCHRONISED SYSTEMS		DATE. 30-Oct-98
WITNESSED.	FOR		DATE.

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.		
Tightness Of Busbars.		
Tightness Of Connections To Busbars.		
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.		
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.		
Shrouding Of Live Terminals.		
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.		
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	TOP	
Equipment Missing.		
1x 32A ISOLATOR Aux 2x AR 63A ISOLATOR + Aux + SHROUDS		
5x SEIGER BIAS'I' SINGLE CHANNEL GAS DETECTION UNIT		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/1
SIGNATURE	FOR SYNCHRONISED SYSTEMS	DATE	30-Oct-98
WITNESSED	FOR	DATE	

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW		M. Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301		YELLOW - BLUE		M. Ohms
		BLUE - RED		M. Ohms
		RED - NEUTRAL		M. Ohms
		YELLOW - NEUTRAL		M. Ohms
CLARE MODEL No A203B SERIAL No 82081/A1		BLUE - NEUTRAL		M. Ohms
		RED - EARTH		M. Ohms
		YELLOW - EARTH		M. Ohms
		BLUE - EARTH		M. Ohms
Flash Voltage.	2500V/1 MINUTE	NEUTRAL - EARTH		M. Ohms

EARTH CONTINUITY.

Earth Continuity Test.	
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TIGHTNESS CHECKS.

BusBar Connections	
Cable in Fuse Carriers/MCBs	
Cable to Equipment	
Cable to Terminals	



SHROUDING.

Live Terminals	
Switches and Pilot Lights	
Unenclosed Equipment	
Load Break Isolators and Switchfuses	



SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5-7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : MCCB/1

TASKS TO CHECK


INITIALS

a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>AW</u>
c) Cable In Contactors Tight	<u>LB AT</u>
d) Cable In Terminals Tight	<u>PL AT</u>
e) Control Cable Tightness Correct	<u>LB AT</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>DS</u>
h) Isolator Connections Torqued/Tight	<u>AW</u>
i) Overloads Fitted (Size Checked Also)	<u>DS</u>
j) Paintwork Acceptable	<u>JE AT</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>DS AT</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>PL AT</u>

Date Completed : 29th October 98

N.M

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/2
SIGNATURE.	 FOR SYNCHRONISED SYSTEMS		DATE. 22-Oct-98
WITNESSED.	_____ FOR		DATE. _____

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/2
SIGNATURE	<i>B. Ballone</i> FOR SYNCHRONISED SYSTEMS		DATE
WITNESSED.	FOR		DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.		Overload Device.	GV2-M07
BMS / SECURITY ROOM SUPPLY FAN 7/SFC/001		Contact(s).	LC1.D09.10U5
		Overload Range.	1.6 - 2.5A
		Overload Setting.	2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	C60HD304 32A ISO
		Ammeter Scale.	N/A
Starter Ref.	C818	C.T. Ratio.	N/A

Motor Ref.		Overload Device.	LR2.D13.07
WORKSHOP VENT SUPPLY FAN 13/SFC/001		Contact(s).	LC1.D09.10U5
		Overload Range.	1.6 - 2.5A
		Overload Setting.	2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	C60HD304 ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C925	C.T. Ratio.	TAQ2 5A / 5

Motor Ref.		Overload Device.	LR2.D13.07
BOILER COMBUSTION AIR FAN N).1 14/SFC/01		Contact(s).	LC1.D09.10U5
		Overload Range.	1.6 - 2.5A
		Overload Setting.	2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	C60HD304 ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C1017	C.T. Ratio.	TAQ2 5A / 5

Motor Ref.		Overload Device.	LR2.D13.07
BOILER COMBUSTION AIR FAN N).1 14/SFC/02		Contact(s).	LC1.D09.10U5
		Overload Range.	1.6 - 2.5A
		Overload Setting.	2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	C60HD304 ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C1029	C.T. Ratio.	TAQ2 5A / 5

Motor Ref.		Overload Device.	
		Contact(s).	
		Overload Range.	
		Overload Setting.	
		Cable Size.	
		Terminal Size.	
		Starter Fuse /MCB Type/Size.	
		Ammeter Scale.	
Starter Ref.		C.T. Ratio.	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	6 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/2
SIGNATURE	<i>[Signature]</i> FOR SYNCHRONISED SYSTEMS		DATE: 22-Oct-98
WITNESSED	FOR		DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	LC1.D3210U5
EAST OFFICE AHU01 SUPPLY FAN 1/SFV/001		Cable Size	10mm
		Terminal Size	16mm
		Fuse/MCB Type/Size	C60HD332 32A ISO
		Ammeter Scale	N/A
Contactor Ref.	C215	C.T. Ratio	N/A

Ref.		Contactor(s)	LC1.D3210U5
EAST OFFICE AHU01 EXTRACT FAN 1/EFV/001		Cable Size	10mm
		Terminal Size	16mm
		Fuse/MCB Type/Size	C60HD332 32A ISO
		Ammeter Scale	N/A
Contactor Ref.	C230	C.T. Ratio	N/A

Ref.		Contactor(s)	LC1.D3210U5
WEST OFFICE AHU02 SUPPLY FAN 2/SFV/001		Cable Size	10mm
		Terminal Size	16mm
		Fuse/MCB Type/Size	C60HD332 32A ISO
		Ammeter Scale	N/A
Contactor Ref.	C515	C.T. Ratio	N/A

Ref.		Contactor(s)	LC1.D3210U5
WEST OFFICE AHU02 EXTRACT FAN 2/EFV/001		Cable Size	10mm
		Terminal Size	16mm
		Fuse/MCB Type/Size	C60HD332 32A ISO
		Ammeter Scale	N/A
Contactor Ref.	C530	C.T. Ratio	N/A

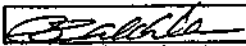
Ref.		Contactor(s)	LC1.D09.10U5
BMS/SECURITY ROOM ELECTRIC HEATER BATTERY		Cable Size	2.5mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB110 ISO 32A
		Ammeter Scale	N/A
Contactor Ref.	C835	C.T. Ratio	N/A

Ref.		Contactor(s)	LC1.D09.10U5
BOILER ROOM ELECTRIC HEATER BATTERY		Cable Size	2.5mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB310 ISO 32A
		Ammeter Scale	N/A
Contactor Ref.	C1126	C.T. Ratio	N/A

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/2
SIGNATURE.		FOR SYNCHRONISED SYSTEMS	DATE. 22-Oct-98
WITNESSED.		FOR	DATE.

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		<input checked="" type="checkbox"/>
Access For Main Incoming Cable.		<input checked="" type="checkbox"/>
Access For Outgoing Terminals.		<input checked="" type="checkbox"/>
Suitability Of Gland Plates.		<input checked="" type="checkbox"/>
Busbars To Specification.		<input checked="" type="checkbox"/>
Tightness Of Busbars.		<input checked="" type="checkbox"/>
Tightness Of Connections To Busbars.		<input checked="" type="checkbox"/>
Tightness of Cables in Terminal Strip and Equipment.		<input checked="" type="checkbox"/>
Neatness and Size Of Cable Looms.		<input checked="" type="checkbox"/>
Cleating Of Wiring.		<input checked="" type="checkbox"/>
Packing Of Cables In Trunking.		<input checked="" type="checkbox"/>
Phasing and Marking Of Power Wiring.		<input checked="" type="checkbox"/>
Ferruling Of Control Wiring.		<input checked="" type="checkbox"/>
Position Of Instrumentation.		<input checked="" type="checkbox"/>
Position Of Control Switches.		<input checked="" type="checkbox"/>
Position Of Equipment in Panel Requiring Adjustment.		<input checked="" type="checkbox"/>
Fuse /MCB Charts.		<input checked="" type="checkbox"/>
Spare Fuses.	N/A	<input checked="" type="checkbox"/>
Labelling Of Switches, Lights and Terminals.		<input checked="" type="checkbox"/>
Labelling Of Equipment In Panel.		<input checked="" type="checkbox"/>
Shrouding Of Unenclosed Equipment.	N/A	<input checked="" type="checkbox"/>
Shrouding Of Switches and Pilot Lights.		<input checked="" type="checkbox"/>
Shrouding Of Live Terminals.	N/A	<input checked="" type="checkbox"/>
Identification and Isolation Of Incoming Feeds.		<input checked="" type="checkbox"/>
Ventilation Of Starter Resistors.	N/A	<input checked="" type="checkbox"/>
Step Controller Settings.	N/A	<input checked="" type="checkbox"/>
Timeswitch Settings.	N/A	<input checked="" type="checkbox"/>
Cleating Of Instrument Capillaries.	N/A	<input checked="" type="checkbox"/>
Cleating Of Pneumatic Tubing.	N/A	<input checked="" type="checkbox"/>
Segregation Of Electronic Equipment From Heat Source.	N/A	<input checked="" type="checkbox"/>
Reinforced Lifting Points and Provision Of Lifting Eyes.		<input checked="" type="checkbox"/>
Condition Of Paintwork.		<input checked="" type="checkbox"/>
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	<input checked="" type="checkbox"/>
Compliance With Wiring Diagrams.		<input checked="" type="checkbox"/>
Function Check For Interlocking and Sequencing.		<input checked="" type="checkbox"/>
Cable Entry Top / Bottom.	TOP	<input checked="" type="checkbox"/>
Equipment Missing.		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCCB/2
SIGNATURE.	 FOR SYNCHRONISED SYSTEMS		DATE. 22-Oct-98
WITNESSED.	FOR <div style="border: 1px solid black; height: 20px; width: 100%;"></div>		DATE.

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	100+	M.Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301	✓	YELLOW - BLUE	100+	M.Ohms
		BLUE - RED	100+	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	100+	M.Ohms
		BLUE - NEUTRAL	100+	M.Ohms
CLARE MODEL No A203B SERIAL No 82081/A1	✓	RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	100+	M.Ohms
		BLUE - EARTH	100+	M.Ohms
		NEUTRAL - EARTH	100+	M.Ohms
Flash Voltage.	2500V/1 MINUTE	✓		

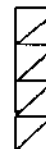
EARTH CONTINUITY.

Earth Continuity Test	
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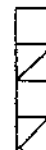
TIGHTNESS CHECKS.

BusBar Connections.	
Cable in Fuse Carriers/MCBs.	
Cable to Equipment.	
Cable to Terminals.	



SHROUDING.

Live Terminals.	N/A
Switches and Pilot Lights.	
Unenclosed Equipment.	N/A
Load Break Isolators and Switchfuses.	



SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5-7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : MCCB/2

TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight

N/A

b) Busbar Connections Torqued/Tight

RVS.

c) Cable In Contactors Tight

JR

d) Cable In Terminals Tight

JR

e) Control Cable Tightness Correct

C.C.

f) Fuse Links Fitted (Size Checked Also)

N/A

g) MCB's Correct Size

RVS.

h) Isolator Connections Torqued/Tight

RVS

i) Overloads Fitted (Size Checked Also)

JR

j) Paintwork Acceptable

JR

k) Terminal Shrouds Fitted

N/A

l) Isolator Shrouds Fitted

RVS.

m) CT's Fitted (Size Checked Also)

JR

n) Spare Fuses Fitted

N/A

o) Drawing Wallet/Pocket Fitted

RVS

Date Completed : 23RD OCT - 1998

P.L

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	6 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCC7/1
SIGNATURE	A. BEVAN FOR SYNCHRONISED SYSTEMS		DATE. 31-Mar-99
WITNESSED.	FOR		DATE. 07-Apr-99

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCC7/1
SIGNATURE	A BEVAN	FOR SYNCHRONISED SYSTEMS	DATE 31-Mar-99
WITNESSED		FOR	DATE 07-Apr-99

MOTOR STARTERS.

COMPLIANCE

Motor Ref. AHU03 SUPPLY FAN 3/SFC/001	Overload Device.	LR2.D13.16
	Contactor(s).	LC1.D09.10U5
	Overload Range.	9 - 13A
	Overload Setting.	9.8A
	Cable Size.	2.5mm
	Terminal Size.	4mm
	Starter Fuse /MCB Type/Size.	C60HD316 ISO 32A
	Ammeter Scale.	N/A
Starter Ref.	C216	C.T. Ratio.
		N/A

Motor Ref.	Overload Device.	LR2.D13.16
AHU03	Contactora(s).	LC1.D12.10U5
EXTRACT FAN No.1	Overload Range	9 - 13A
3/EFC/001	Overload Setting	9.8A
	Cable Size	2.5mm
	Terminal Size	4mm
	Starter Fuse /MCB Type/Size	C60HD316 ISO 32A
	Ammeter Scale	N/A
Starter Ref.	C.T. Ratio	N/A
C316		

Motor Ref. AHU03 EXTRACT FAN No.2 3/EFC/002	Overload Device.	LR2.D13.16
	Contactor(s).	LC1.D12.10U5
	Overload Range.	9 - 13A
	Overload Setting.	9.8A
	Cable Size	2.5mm
	Terminal Size	4mm
	Starter Fuse /MCB Type/Size	C60HD316 ISO 32A
	Ammeter Scale	N/A
Starter Ref.	C328	C.T. Ratio
		N/A

Motor Ref.	Overload Device.	
	Contactor(s).	
	Overload Range.	
	Overload Setting.	
	Cable Size.	
	Terminal Size.	
	Starter Fuse /MCB Type/Size.	
	Ammeter Scale.	
Starter Ref.	C.T. Ratio.	


Motor Ref.	Overload Device.
	Contacto(r)(s).
	Overload Range.
	Overload Setting.
	Cable Size.
	Terminal Size.
	Starter Fuse /MCB Type/Size.
	Ammeter Scale.
Starter Ref.	C.T. Ratio.

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCC7/1
SIGNATURE	A BEVAN FOR SYNCHRONISED SYSTEMS		DATE. 31-Mar-99
WITNESSED	FOR		DATE 07-Apr-99

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.		
Tightness Of Busbars.		
Tightness Of Connections To Busbars.		
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.		
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.		
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.		
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference.	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	TOP	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCC7/1
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 31-Mar-99
WITNESSED	FOR		DATE 07-Apr-99

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	100+	M. Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301		YELLOW - BLUE	100+	M. Ohms
		BLUE - RED	100+	M. Ohms
		RED - NEUTRAL	100+	M. Ohms
		YELLOW - NEUTRAL	100+	M. Ohms
CLARE MODEL No A203B SERIAL No 82081/A1		BLUE - NEUTRAL	100+	M. Ohms
		RED - EARTH	100+	M. Ohms
		YELLOW - EARTH	100+	M. Ohms
		BLUE - EARTH	100+	M. Ohms
Flash Voltage.	2500V/1 MINUTE	NEUTRAL - EARTH	100+	M. Ohms

EARTH CONTINUITY.

Earth Continuity Test		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections		<input checked="" type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input checked="" type="checkbox"/>
Cable to Equipment		<input checked="" type="checkbox"/>
Cable to Terminals		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals	N/A	<input checked="" type="checkbox"/>
Switches and Pilot Lights		<input checked="" type="checkbox"/>
Unenclosed Equipment	N/A	<input checked="" type="checkbox"/>
Load Break Isolators and Switchfuses		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : MCC7

TASKS TO CHECK



INITIALS

a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>J.D.C.</u>
c) Cable In Contactors Tight	<u>J.D.C.</u>
d) Cable In Terminals Tight	<u>J.D.C.</u>
e) Control Cable Tightness Correct	<u>J.D.C.</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>J.D.C.</u>
h) Isolator Connections Torqued/Tight	<u>J.D.C.</u>
i) Overloads Fitted (Size Checked Also)	<u>J.D.C.</u>
j) Paintwork Acceptable	<u>J.D.C.</u>
k) Terminal Shrouds Fitted	<u>J.D.C.</u>
l) Isolator Shrouds Fitted	<u>J.D.C.</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>J.D.C.</u>

Date Completed : 30-3-99

N/A

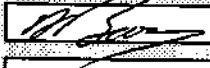
SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP1
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 17-Feb-99
WITNESSED.	 FOR		DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP1
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 17-Feb-99
WITNESSED		FOR	DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.	RESIDENTIAL STAIRCASE PRESSURISATION FAN No.1 SP03/01 10/SFC/001	Overload Device.	LR2.D13.14
		Contactor(s).	LC1.D12.10U5
		Overload Range.	7 - 10A
		Overload Setting.	8.2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	NIT 25A ISO32A
		Ammeter Scale.	N/A
Starter Ref.	C216	C.T. Ratio.	15/5A

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Motor Ref.	RESIDENTIAL STAIRCASE PRESSURISATION FAN No.2 SP03/02 10/SFC/002	Overload Device	LR2.D13.14
		Contactor(s)	LC1.D12.10U5
		Overload Range	7 - 10A
		Overload Setting	8.2A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	NIT 25A ISO32A
		Ammeter Scale	N/A
Starter Ref.	C228	C.T. Ratio	15/5A

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Motor Ref.	OFFICE STAIRCASE PRESSURISATION FAN No.1 SP02/01 11/SFC/001	Overload Device.	LR2.D13.14
		Contactor(s).	LC1.D12.10U5
		Overload Range.	7 - 10A
		Overload Setting.	8.4A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	NIT 25A ISO32A
		Ammeter Scale.	N/A
Starter Ref.	C316	C.T. Ratio.	15/5A

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Motor Ref.	Overload Device	LR2.D13.14	
OFFICE STAIRCASE PRESSURISATION FAN No.2 SP02/02 11/SFC/002	Contactor(s)	LC1.D12.10U5	
	Overload Range	7 - 10A	
	Overload Setting	8.4A	
	Cable Size	2.5mm	
	Terminal Size	4mm	
	Starter Fuse /MCB Type/Size	NIT 25A ISO32A	
	Ammeter Scale	N/A	
Starter Ref.	C328	C.T. Ratio	15/5A

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Motor Ref.	FIRE FIGHTING STAIRCASE PRESSURISATION FAN No.1 SP01/01 12/SFC/001	Overload Device.	LR2.23.53
		Contactor(s).	LC1.D25.10U5
		Overload Range.	23 - 53A
		Overload Setting.	23.5A
		Cable Size.	10mm / 4mm
		Terminal Size.	6mm
		Starter Fuse /MCB Type/Size	TIS 50A ISO 63A
		Ammeter Scale.	N/A
Starter Ref.	C413	C.T. Ratio.	50/5A

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SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP1
SIGNATURE	FOR SYNCHRONISED SYSTEMS		DATE 17-Feb-99
WITNESSED	FOR		DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.			Overload Device.	LR2 23 53	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
FIRE FIGHTING STAIRCASE PRESSURISATION FAN No.2 SP01/02 12/SFC/002			Contact(s).	LC1.D25.10U5	
			Overload Range.	23 - 53A	
			Overload Setting.	23.5A	
			Cable Size.	10mm / 4mm	
			Terminal Size.	6mm	
			Starter Fuse /MCB Type/Size.	TIS 50A ISO 63A	
			Ammeter Scale.	N/A	
Starter Ref.	C430	C.T. Ratio.	50/5A		


Motor Ref.			Overload Device.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			Contact(s).		
			Overload Range.		
			Overload Setting.		
			Cable Size.		
			Terminal Size.		
			Starter Fuse /MCB Type/Size.		
			Ammeter Scale.		
Starter Ref.		C.T. Ratio.			

Motor Ref.			Overload Device.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			Contact(s).		
			Overload Range.		
			Overload Setting.		
			Cable Size.		
			Terminal Size.		
			Starter Fuse /MCB Type/Size.		
			Ammeter Scale.		
Starter Ref.		C.T. Ratio.			

Motor Ref.			Overload Device.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			Contact(s).		
			Overload Range.		
			Overload Setting.		
			Cable Size.		
			Terminal Size.		
			Starter Fuse /MCB Type/Size.		
			Ammeter Scale.		
Starter Ref.		C.T. Ratio.			


Motor Ref.			Overload Device.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
			Contact(s).		
			Overload Range.		
			Overload Setting.		
			Cable Size.		
			Terminal Size.		
			Starter Fuse /MCB Type/Size.		
			Ammeter Scale.		
Starter Ref.		C.T. Ratio.			

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP1
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 17-Feb-99
WITNESSED	FOR		DATE

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet		<input checked="" type="checkbox"/>
Access For Main Incoming Cable		<input checked="" type="checkbox"/>
Access For Outgoing Terminals		<input checked="" type="checkbox"/>
Suitability Of Gland Plates		<input checked="" type="checkbox"/>
Busbars To Specification		<input checked="" type="checkbox"/>
Tightness Of Busbars		<input checked="" type="checkbox"/>
Tightness Of Connections To Busbars		<input checked="" type="checkbox"/>
Tightness of Cables in Terminal Strip and Equipment		<input checked="" type="checkbox"/>
Neatness and Size Of Cable Looms		<input checked="" type="checkbox"/>
Cleating Of Wiring		<input checked="" type="checkbox"/>
Packing Of Cables In Trunking		<input checked="" type="checkbox"/>
Phasing and Marking Of Power Wiring		<input checked="" type="checkbox"/>
Ferruling Of Control Wiring		<input checked="" type="checkbox"/>
Position Of Instrumentation		<input checked="" type="checkbox"/>
Position Of Control Switches		<input checked="" type="checkbox"/>
Position Of Equipment In Panel Requiring Adjustment		<input checked="" type="checkbox"/>
Fuse /MCB Charts		<input checked="" type="checkbox"/>
Spare Fuses		<input checked="" type="checkbox"/>
Labelling Of Switches, Lights and Terminals		<input checked="" type="checkbox"/>
Labelling Of Equipment In Panel		<input checked="" type="checkbox"/>
Shrouding Of Unenclosed Equipment	N/A	<input checked="" type="checkbox"/>
Shrouding Of Switches and Pilot Lights		<input checked="" type="checkbox"/>
Shrouding Of Live Terminals		<input checked="" type="checkbox"/>
Identification and Isolation Of Incoming Feeds		<input checked="" type="checkbox"/>
Ventilation Of Starter Resistors	N/A	<input checked="" type="checkbox"/>
Step Controller Settings	N/A	<input checked="" type="checkbox"/>
Timeswitch Settings	N/A	<input checked="" type="checkbox"/>
Cleating Of Instrument Capillaries	N/A	<input checked="" type="checkbox"/>
Cleating Of Pneumatic Tubing	N/A	<input checked="" type="checkbox"/>
Segregation Of Electronic Equipment From Heat Source	N/A	<input checked="" type="checkbox"/>
Reinforced Lifting Points and Provision Of Lifting Eyes		<input checked="" type="checkbox"/>
Condition Of Paintwork		<input checked="" type="checkbox"/>
Common Keys For All Panels / Key Number Reference :	KEY No. SQUARE KEY TYPE	<input checked="" type="checkbox"/>
Compliance With Wiring Diagrams		<input checked="" type="checkbox"/>
Function Check For Interlocking and Sequencing		<input checked="" type="checkbox"/>
Cable Entry Top / Bottom	TOP	<input checked="" type="checkbox"/>
Equipment Missing		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>
		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP1
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 17-Feb-99
WITNESSED	FOR		DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No		RED - YELLOW	100 +	M.Ohms	
CLARE MODEL No A203C/213/F SERIAL No 81301	<input checked="" type="checkbox"/>	YELLOW - BLUE	100 +	M.Ohms	
		BLUE - RED	100 +	M.Ohms	
		RED - NEUTRAL	100 +	M.Ohms	
		YELLOW - NEUTRAL	100 +	M.Ohms	
CLARE MODEL No A203B SERIAL No 82081/A1	<input type="checkbox"/>	BLUE - NEUTRAL	100 +	M.Ohms	
		RED - EARTH	100 +	M.Ohms	
		YELLOW - EARTH	100 +	M.Ohms	
		BLUE - EARTH	100 +	M.Ohms	
Flash Voltage	2500V/1 MINUTE	<input checked="" type="checkbox"/>	NEUTRAL - EARTH	100 +	M.Ohms

EARTH CONTINUITY.

Earth Continuity Test		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections		<input checked="" type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input checked="" type="checkbox"/>
Cable to Equipment		<input checked="" type="checkbox"/>
Cable to Terminals		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals	N/A	<input type="checkbox"/>
Switches and Pilot Lights		<input checked="" type="checkbox"/>
Unenclosed Equipment	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : MCP1

TASKS TO CHECK

INITIALS


a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>H.C</u>
c) Cable In Contactors Tight	<u>H.C</u> HJ
d) Cable In Terminals Tight	<u>H.C</u> HJ
e) Control Cable Tightness Correct	<u>H.C</u> HJ
f) Fuse Links Fitted (Size Checked Also)	<u>H.C</u>
g) MCB's Correct Size	<u>H.C</u> HJ
h) Isolator Connections Torqued/Tight	<u>H.C</u>
i) Overloads Fitted (Size Checked Also)	<u>H.C</u> HJ
j) Paintwork Acceptable	<u>H.C</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>H.C</u>
m) CT's Fitted (Size Checked Also)	<u>H.C</u>
n) Spare Fuses Fitted	<u>H.C</u> HJ
o) Drawing Wallet/Pocket Fitted	<u>H.C</u>

Date Completed :

15th FEB - 1999

P.L

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP2
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 18-Nov-98
WITNESSED	FOR		DATE 18-Nov-98

DRAWINGS USED FOR TEST

[illegible]

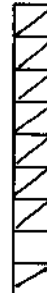
SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP2
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE 18-Nov-98
WITNESSED		FOR	DATE 18-Nov-98

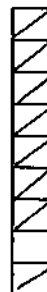
MOTOR STARTERS.

COMPLIANCE

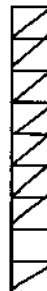
MOTOR Ref. BASEMENT STAFFROOM & MAILROOM SUPPLY FAN No.1 SF02/01 SYSTEM 4	Overload Device	LR2D13X6
	Contactor(s)	LC1D0910U5
	Overload Range	1.25-2A
	Overload Setting	1.55A
	Cable Size	2.5mm
	Terminal Size	4mm
	Starter Fuse /MCB Type/Size	NIT6/6A
	Ammeter Scale	N/A
Starter Ref.	C215	C.T. Ratio
		N/A 5/5A



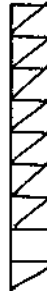
MOTOR Ref. BASEMENT STAFFROOM & MAILROOM SUPPLY FAN No.2 SF02/02 SYSTEM 4	Overload Device	LR2D13X6
	Contactor(s)	LC1D0910U5
	Overload Range	1.25-2A
	Overload Setting	1.55A
	Cable Size	2.5mm
	Terminal Size	4mm
	Starter Fuse /MCB Type/Size	NIT6/6A
	Ammeter Scale	N/A
Starter Ref.	C226	C.T. Ratio
		N/A 5/5A



MOTOR Ref. BASEMENT STAFFROOM & MAILROOM EXTRACT FAN No.1 EXH06/01 SYSTEM 4	Overload Device	LR2D1310
	Contactor(s)	LC1D0910U5
	Overload Range	4-6A
	Overload Setting	5.3A
	Cable Size	2.5mm
	Terminal Size	4mm
	Starter Fuse /MCB Type/Size	NIT16/16A
	Ammeter Scale	N/A
Starter Ref.	C315	C.T. Ratio
		N/A 5/10A



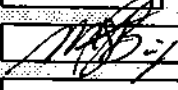
MOTOR Ref. BASEMENT STAFFROOM & MAILROOM EXTRACT FAN No.2 EXH06/02 SYSTEM 4	Overload Device	LR2D1310
	Contactor(s)	LC1D0910U5
	Overload Range	4-6A
	Overload Setting	5.3A
	Cable Size	2.5mm
	Terminal Size	4mm
	Starter Fuse /MCB Type/Size	NIT16/16A
	Ammeter Scale	N/A
Starter Ref.	C326	C.T. Ratio
		N/A 5/10A



MOTOR Ref. BASEMENT WC & REFUSE ROOM EXTRACT FAN No.1 EXH07/01 SYSTEM 5	Overload Device	LR2D1307
	Contactor(s)	LC1D0910U5
	Overload Range	1.6-2.5A
	Overload Setting	2A
	Cable Size	2.5mm
	Terminal Size	4mm
	Starter Fuse /MCB Type/Size	NIT6/6A
	Ammeter Scale	N/A
Starter Ref.	C415	C.T. Ratio
		N/A 5/5A



SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP2
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 18-Nov-98
WITNESSED		FOR	DATE 18-Nov-98

MOTOR STARTERS.

COMPLIANCE

Motor Ref.	Overload Device.	LR2D1307
BASEMENT WC & REFUSE ROOM EXTRACT FAN No.2 EXH07/02 SYSTEM 5	Contactor(s).	LC1D0910U5
	Overload Range.	1.6-2.5A
	Overload Setting.	2A
	Cable Size.	2.5mm
	Terminal Size.	4mm
	Starter Fuse /MCB Type/Size.	NIT6/6A
	Ammeter Scale.	N/A
	Starter Ref. C426	C.T. Ratio.



Motor Ref.	Overload Device.	LR2D1312 - LR2D1322
CAR PARK EXTRACT FAN No.1 EXH01/01 SYSTEM 6	Contactor(s).	LC1D2510U5
	Overload Range.	5.5-8A - 17-25A
	Overload Setting.	6.4A - 21A
	Cable Size.	4mm
	Terminal Size.	6mm
	Starter Fuse /MCB Type/Size.	TIA32/32A - NS16/16A
	Ammeter Scale.	N/A
	Starter Ref. C518	C.T. Ratio.

Motor Ref.	Overload Device.	LR2D1312 - LR2D1322
CAR PARK EXTRACT FAN No.2 EXH01/02 SYSTEM 6	Contactor(s).	LC1D2510U5
	Overload Range.	5.5-8A - 17-25A
	Overload Setting.	6.4A - 21A
	Cable Size.	4mm
	Terminal Size.	6mm
	Starter Fuse /MCB Type/Size.	TIA32/32A - NS16/16A
	Ammeter Scale.	N/A
	Starter Ref. C618	C.T. Ratio.

Motor Ref.	Overload Device.	
	Contactor(s).	
	Overload Range.	
	Overload Setting.	
	Cable Size.	
	Terminal Size.	
	Starter Fuse /MCB Type/Size.	
	Ammeter Scale.	
	Starter Ref.	C.T. Ratio.

Motor Ref.	Overload Device.	
	Contactor(s).	
	Overload Range.	
	Overload Setting.	
	Cable Size.	
	Terminal Size.	
	Starter Fuse /MCB Type/Size.	
	Ammeter Scale.	
	Starter Ref.	C.T. Ratio.

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP2
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 18-Nov-98
WITNESSED.	 FOR		DATE. 18-Nov-98

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.		
Tightness Of Busbars.		
Tightness Of Connections To Busbars.		
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.		
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.		
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.		
Shrouding Of Switches and Pilot Lights.		
Shrouding Of Live Terminals.		
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.		
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	SQUARE TYPE	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom:	FORM 4	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP2
SIGNATURE:	<i>[Signature]</i>		DATE: 18-Nov-98
WITNESSED:	FOR SYNCHRONISED SYSTEMS		DATE: 18-Nov-98

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No. CLARE MODEL No A203C/213/F SERIAL No 81301 CLARE MODEL No A203B SERIAL No 82081/A1 Flash Voltage: 2500V/1 MINUTE		RED - YELLOW	100+	M Ohms
		YELLOW - BLUE	100+	M Ohms
	✓	BLUE - RED	100+	M Ohms
		RED - NEUTRAL	100+	M Ohms
		YELLOW - NEUTRAL	100+	M Ohms
		BLUE - NEUTRAL	100+	M Ohms
		RED - EARTH	100+	M Ohms
		YELLOW - EARTH	100+	M Ohms
		BLUE - EARTH	100+	M Ohms
	✓	NEUTRAL - EARTH	100+	M Ohms

EARTH CONTINUITY.

Earth Continuity Test.		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections.		<input checked="" type="checkbox"/>
Cable in Fuse Carriers/MCBs.		<input checked="" type="checkbox"/>
Cable to Equipment.		<input checked="" type="checkbox"/>
Cable to Terminals.		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals.	N/A	<input type="checkbox"/>
Switches and Pilot Lights.	N/A	<input type="checkbox"/>
Unenclosed Equipment.	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses.		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP2
SIGNATURE.	FOR SYNCHRONISED SYSTEMS		DATE. 18-Nov-98
WITNESSED.	FOR		DATE. 18-Nov-98

SITE RETEST (MULTI SECTION PANELS)

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No. CLARE MODEL No A203C/213/F SERIAL No 81301 CLARE MODEL No A203B SERIAL No 82081/A1		RED - YELLOW		M.Ohms
		YELLOW - BLUE		M.Ohms
		BLUE - RED		M.Ohms
		RED - NEUTRAL		M.Ohms
		YELLOW - NEUTRAL		M.Ohms
		BLUE - NEUTRAL		M.Ohms
		RED - EARTH		M.Ohms
		YELLOW - EARTH		M.Ohms
		BLUE - EARTH		M.Ohms
		NEUTRAL - EARTH		M.Ohms
Flash Voltage	2500V/1 MINUTE			

TIGHTNESS CHECKS.

BusBar Connections	
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SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5-7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : MCP2

TASKS TO CHECK

INITIALS


- a) Back Stud Connections To Bar Torqued/Tight
- b) Busbar Connections Torqued/Tight
- c) Cable In Contactors Tight
- d) Cable In Terminals Tight
- e) Control Cable Tightness Correct
- f) Fuse Links Fitted (Size Checked Also)
- g) MCB's Correct Size
- h) Isolator Connections Torqued/Tight
- i) Overloads Fitted (Size Checked Also)
- j) Paintwork Acceptable
- k) Terminal Shrouds Fitted
- l) Isolator Shrouds Fitted
- m) CT's Fitted (Size Checked Also)
- n) Spare Fuses Fitted
- o) Drawing Wallet/Pocket Fitted

N/A
SH/
SH/
OK/TB
OK/TB
OK/TB
OK/JR/TB
OK/JR
OK/JR
OK
N/A
OK/JR
OK
OK
OK

Date Completed : 16th Nov - 1998

P.L.


SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP 3
SIGNATURE.		FOR SYNCHRONISED SYSTEMS	DATE. 09-Mar-99
WITNESSED.		FOR	DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP 3
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 09-Mar-99
WITNESSED	FOR		DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.	BASEMENT PLANT WEST EXTRACT FAN No.1 EXH02/01 8/EF2/001 LOW SPEED	Overload Device.	LR2.D13.08
		Contactor(s).	LC1.D12.10U5
		Overload Range.	2.5 - 4A
		Overload Setting.	2.6A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	NIT 10A ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C218 L/S	C.T. Ratio.	5/5A

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Motor Ref.	BASEMENT PLANT WEST EXTRACT FAN No.1 EXH02/01 8/EF2/001 HIGH SPEED	Overload Device.	LR2.D13.16
		Contactor(s).	LC1.D12.10U5
		Overload Range.	9 - 13A
		Overload Setting.	10.5A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	NIT 25A ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C219 H/S	C.T. Ratio.	15/5A

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Motor Ref.	BASEMENT PLANT WEST EXTRACT FAN No.2 EXH02/02 8/EF2/002 LOW SPEED	Overload Device.	LR2.D13.08
		Contactor(s).	LC1.D12.10U5
		Overload Range.	2.5 - 4A
		Overload Setting.	2.6A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	NIT 10A ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C318 L/S	C.T. Ratio.	5/5A

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Motor Ref.	BASEMENT PLANT WEST EXTRACT FAN No.2 EXH02/02 8/EF2/002 HIGH SPEED	Overload Device.	LR2.D13.16
		Contactor(s).	LC1.D12.10U5
		Overload Range.	9 - 13A
		Overload Setting.	10.5A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	NIT 25A ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C319 H/S	C.T. Ratio.	15/5A

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Motor Ref.	PRESSURISATION RELIEF FAN No.1 EXH04/01 20/EFC/001	Overload Device.	LR2.D13.14
		Contactor(s).	LC1.D12.10U5
		Overload Range.	7 - 10A
		Overload Setting.	8.2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size.	NIT 20A ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C415	C.T. Ratio.	15/5A

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SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP 3
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 09-Mar-99
WITNESSED.		FOR	DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.		Overload Device.	LR2.D13.14
PRESSURISATION RELIEF FAN No.2 EXH04/02 20/EFC/002		Contactor(s)	LC1.D09.10U5
		Overload Range.	7 - 10A
		Overload Setting.	8.2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size	NIT 20A ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C432	C.T. Ratio.	/5/5A

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Motor Ref.		Overload Device	LR2.D13.07
BOILER COMBUSTION AIR FAN No.1 14/SFC/001		Contactor(s)	LC1.D09.10U5
		Overload Range	1.6 - 2.5A
		Overload Setting	2A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	NIT 6A ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C717	C.T. Ratio	5/5A

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Motor Ref. BOILER COMBUSTION AIR FAN No.2 14/SFC/002		Overload Device.	LR2.D13.07
		Contactor(s).	LC1.D09.10U5
		Overload Range.	1.6 - 2.5A
		Overload Setting.	2A
		Cable Size.	2.5mm
		Terminal Size.	4mm
		Starter Fuse /MCB Type/Size	NIT 6A ISO 32A
		Ammeter Scale.	N/A
Starter Ref.	C730	C.T. Ratio.	5/5A

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Motor Ref.	Overload Device.	LR2.D13.X 6	
BOILER EXTRACT FAN No.1 EXH09/01	Contactor(s).	LC1.D09.10U5	
	Overload Range.	1.25 - 2A	
	Overload Setting.	1.6A	
	Cable Size.	2.5mm	
	Terminal Size.	4mm	
	Starter Fuse /MCB Type/Size.	NIT 6A ISO 32A	
	Ammeter Scale.	N/A	
Starter Ref.	C845	C.T. Ratio.	5/5A

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Motor Ref.		Overload Device	LR2.D13.X6
BOILER EXTRACT FAN No.2 EXH09/02		Contactor(s)	LC1.D09.10U5
		Overload Range	1.25 - 2A
		Overload Setting	1.6A
		Cable Size	2.5mm
		Terminal Size	4mm
		Starter Fuse /MCB Type/Size	NIT 6A ISO 32A
		Ammeter Scale	N/A
	Starter Ref	C862	C.T. Ratio

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SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP 3
SIGNATURE.	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE. 09-Mar-99
WITNESSED.		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	LC1.D09.10U5
	BOILER ROOM	Cable Size	2.5mm
	ELECTRIC HEATER BATTERY	Terminal Size	4mm
		Fuse/MCB Type/Size	NIT 10A ISO32A
		Ammeter Scale	N/A
Contactor Ref.	C825	C.T. Ratio	N/A

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	


Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	6 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP 3
SIGNATURE.	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE. 09-Mar-99
WITNESSED.		FOR	DATE.

CHECK LIST	REMARKS	COMPLIANCE
Wireman's Check Sheet.		/
Access For Main Incoming Cable.		/
Access For Outgoing Terminals.		/
Suitability Of Gland Plates.		/
Busbars To Specification.		/
Tightness Of Busbars.		/
Tightness Of Connections To Busbars.		/
Tightness of Cables in Terminal Strip and Equipment.		/
Neatness and Size Of Cable Looms.		/
Cleating Of Wiring.		/
Packing Of Cables In Trunking.		/
Phasing and Marking Of Power Wiring.		/
Ferruling Of Control Wiring.		/
Position Of Instrumentation.		/
Position Of Control Switches.		/
Position Of Equipment In Panel Requiring Adjustment.		/
Fuse / MCB Charts.		/
Spare Fuses.		/
Labelling Of Switches, Lights and Terminals.		/
Labelling Of Equipment In Panel.		/
Shrouding Of Unenclosed Equipment.	N/A	/
Shrouding Of Switches and Pilot Lights.		/
Shrouding Of Live Terminals.	N/A	/
Identification and Isolation Of Incoming Feeds.		/
Ventilation Of Starter Resistors.	N/A	/
Step Controller Settings.	N/A	/
Timeswitch Settings.	N/A	/
Cleating Of Instrument Capillaries.	N/A	/
Cleating Of Pneumatic Tubing.	N/A	/
Segregation Of Electronic Equipment From Heat Source.	N/A	/
Reinforced Lifting Points and Provision Of Lifting Eyes.		/
Condition Of Paintwork.		/
Common Keys For All Panels / Key Number Reference :	KEY No. SQUARE KEY TYPE	/
Compliance With Wiring Diagrams.		/
Function Check For Interlocking and Sequencing.		/
Cable Entry Top / Bottom.	TOP	/
Equipment Missing.		/
1 PARTLY TESTED		/
2 SOFTWARE NOT LOADED		/
3 LABEL BOILER EXTRACT FAN		/
- DUTY SELECTION -		/

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP 3
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 09-Mar-99
WITNESSED	FOR		DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No. CLARE MODEL No A203C/213/F SERIAL No 81301 CLARE MODEL No A203B SERIAL No 82081/A1		RED - YELLOW	100+	M.Ohms
		YELLOW - BLUE	100+	M.Ohms
	✓	BLUE - RED	100+	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	100+	M.Ohms
		BLUE - NEUTRAL	100+	M.Ohms
		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	100+	M.Ohms
		BLUE - EARTH	100+	M.Ohms
	✓	NEUTRAL - EARTH	100+	M.Ohms
Flash Voltage:	2500V/1 MINUTE			

EARTH CONTINUITY.

Earth Continuity Test		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections		<input checked="" type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input checked="" type="checkbox"/>
Cable to Equipment		<input checked="" type="checkbox"/>
Cable to Terminals		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals		<input checked="" type="checkbox"/>
Switches and Pilot Lights		<input checked="" type="checkbox"/>
Unenclosed Equipment		<input checked="" type="checkbox"/>
Load Break Isolators and Switchfuses		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : MCP3

TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight

N/A

b) Busbar Connections Torqued/Tight

F.C

c) Cable In Contactors Tight

F.C HJ

d) Cable In Terminals Tight

F.C HJ

e) Control Cable Tightness Correct

F.C HJ

f) Fuse Links Fitted (Size Checked Also)

F.C

g) MCB's Correct Size

F.C HJ

h) Isolator Connections Torqued/Tight

F.C

i) Overloads Fitted (Size Checked Also)

F.C HJ

j) Paintwork Acceptable

F.C

k) Terminal Shrouds Fitted

N/A

l) Isolator Shrouds Fitted

F.C

m) CT's Fitted (Size Checked Also)

F.C

n) Spare Fuses Fitted

F.C

o) Drawing Wallet/Pocket Fitted


F.C

Date Completed :

5th MARCH 1999

PL

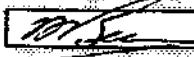
SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP4
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 05-Feb-99
WITNESSED.	FOR		DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP4
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 05-Feb-99
WITNESSED		FOR	DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.		Overload Device	LR2.D13.08
BASEMENT PLANT EAST EXTRACT FAN No.1 EXH03/01 SYSTEM 9 LOW SPEED		Contactor(s)	LC1.D09.10U5
		Overload Range	2.5 - 4A
		Overload Setting	2.6A
		Cable Size	2.5mm
		Terminal Size	6mm
		Starter Fuse /MCB Type/Size	NIT 16A ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C218 / LS	C.T. Ratio	5/5A



Motor Ref.		Overload Device	LR2.D13.16
BASEMENT PLANT EAST EXTRACT FAN No.1 EXH03/01 SYSTEM 9 HIGH SPEED		Contactor(s)	LC1.D12.10U5
		Overload Range	9 - 13A
		Overload Setting	10.5A
		Cable Size	2.5mm
		Terminal Size	6mm
		Starter Fuse /MCB Type/Size	NIT 25A ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C218 / HS	C.T. Ratio	15/5A



Motor Ref.		Overload Device	LR2.D13.08
BASEMENT PLANT EAST EXTRACT FAN No.2 EXH03/02 SYSTEM 9 LOW SPEED		Contactor(s)	LC1.D09.10U5
		Overload Range	2.5 - 4A
		Overload Setting	2.6A
		Cable Size	2.5mm
		Terminal Size	6mm
		Starter Fuse /MCB Type/Size	NIT 16A ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C318 / LS	C.T. Ratio	5/5A



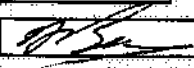
Motor Ref.		Overload Device	LR2.D13.16
BASEMENT PLANT EAST EXTRACT FAN No.2 EXH03/02 SYSTEM 9 HIGH SPEED		Contactor(s)	LC1.D12.10U5
		Overload Range	9 - 13A
		Overload Setting	10.5A
		Cable Size	2.5mm
		Terminal Size	6mm
		Starter Fuse /MCB Type/Size	NIT 25A ISO 32A
		Ammeter Scale	N/A
Starter Ref.	C318 / HS	C.T. Ratio	15/5A



Motor Ref.		Overload Device	LR2.D13.22
PRESSURISATION RELIEF FAN No.2 EXH05/01 21/EFC/001 SYSTEM 21		Contactor(s)	LC1.D25.10U5
		Overload Range	17 - 25A
		Overload Setting	20.3A
		Cable Size	10mm / 4mm
		Terminal Size	6mm
		Starter Fuse /MCB Type/Size	TIS 50A ISO 63A
		Ammeter Scale	N/A
Starter Ref.	C515	C.T. Ratio	50/5A



SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP4
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 05-Feb-99
WITNESSED		FOR	DATE

MOTOR STARTERS.

COMPLIANCE

Motor Ref.		Overload Device.	LR2.D13.22
PRESSURISATION RELIEF FAN No.2 EXH05/02 21/EFC/001 SYSTEM 21		Contact(s)	LC1.D25.10U5
		Overload Range.	17 - 25A
		Overload Setting.	20.3A
		Cable Size.	10mm / 4mm
		Terminal Size.	6mm
		Starter Fuse /MCB Type/Size.	TIS 50A ISO 63A
Starter Ref.	C615	Ammeter Scale.	N/A
		C.T. Ratio.	50/5A

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Motor Ref.		Overload Device.	
		Contact(s)	
		Overload Range.	
		Overload Setting.	
		Cable Size.	
		Terminal Size.	
		Starter Fuse /MCB Type/Size.	
Starter Ref.		Ammeter Scale.	
		C.T. Ratio.	

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Motor Ref.		Overload Device.	
		Contact(s)	
		Overload Range.	
		Overload Setting.	
		Cable Size.	
		Terminal Size.	
		Starter Fuse /MCB Type/Size.	
Starter Ref.		Ammeter Scale.	
		C.T. Ratio.	

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Motor Ref.		Overload Device.	
		Contact(s)	
		Overload Range.	
		Overload Setting.	
		Cable Size.	
		Terminal Size.	
		Starter Fuse /MCB Type/Size.	
Starter Ref.		Ammeter Scale.	
		C.T. Ratio.	

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Motor Ref.		Overload Device.	
		Contact(s)	
		Overload Range.	
		Overload Setting.	
		Cable Size.	
		Terminal Size.	
		Starter Fuse /MCB Type/Size.	
Starter Ref.		Ammeter Scale.	
		C.T. Ratio.	

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SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP4
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 05-Feb-99
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	LCI.D09.10U5
	BMS / SECURITY ROOM	Cable Size	2.5mm
	TOILET EXTRACT FAN UNIT	Terminal Size	4mm
	EXH08	Fuse/MCB Type/Size	NIT 6A ISO 32A
		Ammeter Scale	N/A
Contactor Ref.	C420	C.T. Ratio	N/A

Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.

Ref.	Contactor(s)
	Cable Size
	Terminal Size
	Fuse/MCB Type/Size
	Ammeter Scale
Contactor Ref.	C.T. Ratio

Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.


Ref.	Contactor(s).	
	Cable Size	
	Terminal Size.	
	Fuse/MCB Type/Size.	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio.	

Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	

Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	


Ref.	Contactor(s).	
	Cable Size.	
	Terminal Size.	
	Fuse/MCB Type/Size.	
	Ammeter Scale.	
Contactor Ref.	C.T. Ratio.	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP4
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 05-Feb-99
WITNESSED	FOR		DATE

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.		
Tightness Of Busbars.		
Tightness Of Connections To Busbars.		
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.		
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.		
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.		
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.		
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. SQUARE KEY TYPE	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	TOP	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MCP4
SIGNATURE			DATE 05-Feb-99
WITNESSED	FOR		DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	100+	M.Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301		YELLOW - BLUE	100+	M.Ohms
		BLUE - RED	100+	M.Ohms
CLARE MODEL No A203B SERIAL No 82081/A1		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	100+	M.Ohms
		BLUE - NEUTRAL	100+	M.Ohms
		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	100+	M.Ohms
		BLUE - EARTH	100+	M.Ohms
Flash Voltage	2500V/1 MINUTE	NEUTRAL - EARTH	100+	M.Ohms

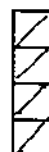
EARTH CONTINUITY.

Earth Continuity Test	
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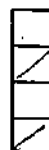
TIGHTNESS CHECKS.

BusBar Connections	
Cable in Fuse Carriers/MCBs	
Cable to Equipment	
Cable to Terminals	



SHROUDING.

Live Terminals	N/A
Switches and Pilot Lights	
Unenclosed Equipment	N/A
Load Break Isolators and Switchfuses	



SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : MCP4

TASKS TO CHECK

INITIALS


a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>MM</u>
c) Cable In Contactors Tight	<u>MM</u>
d) Cable In Terminals Tight	<u>MM</u>
e) Control Cable Tightness Correct	<u>MM</u>
f) Fuse Links Fitted (Size Checked Also)	<u>MM</u>
g) MCB's Correct Size	<u>MM</u>
h) Isolator Connections Torqued/Tight	<u>MM</u>
i) Overloads Fitted (Size Checked Also)	<u>MM</u>
j) Paintwork Acceptable	<u>MM</u>
k) Terminal Shrouds Fitted	<u>MM</u>
l) Isolator Shrouds Fitted	<u>MM</u>
m) CT's Fitted (Size Checked Also)	<u>MM</u>
n) Spare Fuses Fitted	<u>MM</u>
o) Drawing Wallet/Pocket Fitted	<u>MM</u>

Date Completed :

4th - FEB - 1999

P.L

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MOTOR CONTROL PANEL MCP4
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 04-May-99
WITNESSED	FOR		DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MOTOR CONTROL PANEL MCP4
SIGNATURE.	FOR SYNCHRONISED SYSTEMS	DATE	04-May-99
WITNESSED.	FOR	DATE	

MOTOR STARTERS.

COMPLIANCE

Motor Ref.		Overload Device.	LR2.D33.55
PRESSURISATION RELIEF FAN No.1 EXH05/01 21/EFC/001 SYSTEM 21		Contactor(s).	LC1.D40.10U5
		Overload Range.	30 - 40A
		Overload Setting.	32.5A
		Cable Size.	16mm / 10mm
		Terminal Size.	16mm
		Starter Fuse /MCB Type/Size.	TCP80A ISO100A
		Ammeter Scale.	N/A
	Starter Ref.	C515	C.T. Ratio.


Motor Ref.		Overload Device.	LR2.D33.55
PRESSURISATION RELIEF FAN No.2 EXH05/02 21/EFC/001 SYSTEM 21		Contactor(s).	LC1.D40.10U5
		Overload Range.	30 - 40A
		Overload Setting.	32.5A
		Cable Size.	16mm / 10mm
		Terminal Size.	16mm
		Starter Fuse /MCB Type/Size.	TCP80A ISO100A
		Ammeter Scale.	N/A
	Starter Ref.	C615	C.T. Ratio.

Motor Ref.	Overload Device.	
	Contact(s).	
	Overload Range.	
	Overload Setting.	
	Cable Size.	
	Terminal Size.	
	Starter Fuse /MCB Type/Size.	
	Ammeter Scale.	
Starter Ref.	C.T. Ratio.	

Motor Ref.	Overload Device.	
	Contactor(s).	
	Overload Range.	
	Overload Setting.	
	Cable Size.	
	Terminal Size.	
	Starter Fuse /MCB Type/Size.	
	Ammeter Scale.	
Starter Ref.	C.T. Ratio.	

Motor Ref.	Overload Device.	
	Contact(s).	
	Overload Range.	
	Overload Setting.	
	Cable Size.	
	Terminal Size.	
	Starter Fuse /MCB Type/Size.	
	Ammeter Scale.	
Starter Ref.	C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MOTOR CONTROL PANEL MCP4
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 04-May-99
WITNESSED	_____ FOR		DATE. _____

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleaning Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.		
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleaning Of Instrument Capillaries.	N/A	
Cleaning Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.		
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	TOP	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	MOTOR CONTROL PANEL MCP4
SIGNATURE	<i>[Signature]</i> FOR SYNCHRONISED SYSTEMS		DATE: 04-May-99
WITNESSED	FOR		DATE:

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	100+	M.Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301	<input checked="" type="checkbox"/>	YELLOW - BLUE	100+	M.Ohms
		BLUE - RED	100+	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	100+	M.Ohms
		BLUE - NEUTRAL	100+	M.Ohms
CLARE MODEL No A203B SERIAL No 82081/A1	<input type="checkbox"/>	RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	100+	M.Ohms
		BLUE - EARTH	100+	M.Ohms
		NEUTRAL - EARTH	100+	M.Ohms
Flash Voltage.	2500V/1 MINUTE	<input checked="" type="checkbox"/>		

EARTH CONTINUITY.

Earth Continuity Test		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs.		<input checked="" type="checkbox"/>
Cable to Equipment.		<input checked="" type="checkbox"/>
Cable to Terminals.		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals.	N/A	<input type="checkbox"/>
Switches and Pilot Lights.	N/A	<input type="checkbox"/>
Unenclosed Equipment.	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses.		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : CARLTON GARDENS

CONTRACT NUMBER : S98057


PANEL : MCP4

TASKS TO CHECK	INITIALS
a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>TL</u>
d) Cable In Terminals Tight	<u>TL</u>
e) Control Cable Tightness Correct	<u>TL</u>
f) Fuse Links Fitted (Size Checked Also)	<u>TL</u>
g) MCB's Correct Size	<u>N/A</u>
h) Isolator Connections Torqued/Tight	<u>TL</u>
i) Overloads Fitted (Size Checked Also)	<u>TL</u>
j) Paintwork Acceptable	<u>TL</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>N/A</u>
m) CT's Fitted (Size Checked Also)	<u>TL</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed :

30th APRIL - 1999P.L


SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/LG/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 09-Dec-98
WITNESSED.	FOR		DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/LG/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 09-Dec-98
WITNESSED	FOR		DATE


POWER FEEDS

Ref.	ZONE CONTROLLER	Contactor(s)	N/A
		Cable Size	2.5mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
Contactor Ref.		N/A	C.T. Ratio
Ref.	CHILLED WATER KWh HEAT METER 30/VFC/001	Contactor(s)	N/A
		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.		N/A	C.T. Ratio
Ref.	LTHW KWh HEAT METER 30/VFC/002	Contactor(s)	N/A
		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.		N/A	C.T. Ratio
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio

COMPLIANCE

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/LG/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 09-Dec-98
WITNESSED	FOR		DATE.

CHECK LIST	REMARKS	COMPLIANCE
Wireman's Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleaning Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.		
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleaning Of Instrument Capillaries.	N/A	
Cleaning Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. EK333	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/LG/E
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE 09-Dec-98
WITNESSED		FOR	DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.			RED - YELLOW	N/A	M.Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301	<input checked="" type="checkbox"/>		YELLOW - BLUE	N/A	M.Ohms
			BLUE - RED	N/A	M.Ohms
			RED - NEUTRAL	100+	M.Ohms
			YELLOW - NEUTRAL	N/A	M.Ohms
CLARE MODEL No A203B SERIAL No 82081/A1	<input type="checkbox"/>		BLUE - NEUTRAL	N/A	M.Ohms
			RED - EARTH	100+	M.Ohms
			YELLOW - EARTH	N/A	M.Ohms
			BLUE - EARTH	N/A	M.Ohms
Flash Voltage	2500V/1 MINUTE	<input checked="" type="checkbox"/>	NEUTRAL - EARTH	100+	M.Ohms

EARTH CONTINUITY.

Earth Continuity Test		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input checked="" type="checkbox"/>
Cable to Equipment		<input checked="" type="checkbox"/>
Cable to Terminals		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals	N/A	<input type="checkbox"/>
Switches and Pilot Lights	N/A	<input type="checkbox"/>
Unenclosed Equipment	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"








CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : SMOKE DAMPER CONTROL PANEL SCP/LG/E

TASKS TO CHECK


INITIALS

a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u></u>
d) Cable In Terminals Tight	<u></u>
e) Control Cable Tightness Correct	<u></u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u></u>
h) Isolator Connections Torqued/Tight	<u></u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u></u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u></u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed : 9th DEC - 1998

P.L.


SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/LGW
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 09-Dec-98
WITNESSED	_____ FOR		DATE _____

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/LGW
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE: 09-Dec-98
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
ZONE CONTROLLER		Cable Size	2.5mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	N/A
CHILLED WATER KWh HEAT METER 37/VFC/001		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	N/A
LTHW KWh HEAT METER 37/VFC/002		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	


Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	


SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/N
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE. 08-Jan-99
WITNESSED.		FOR	DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/N
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 08-Jan-99
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
ZONE CONTROLLER		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
	Contactor Ref.	N/A	C.T. Ratio

Ref.		Contactor(s)	N/A
CHILLED WATER & LTHW KWh HEAT MEATER		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
	Contactor Ref.	N/A	C.T. Ratio

Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	

Ref.	Contactor(s).	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	


Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/ MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	

Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.

Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	


Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/N
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 08-Jan-99
WITNESSED		FOR	DATE

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleaning Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Stop Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleaning Of Instrument Capillaries.	N/A	
Cleaning Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/N
SIGNATURE			DATE: 08-Jan-99
WITNESSED	FOR		DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No. CLARE MODEL No A203C/213/F SERIAL No 81301 CLARE MODEL No A203B SERIAL No 82081/A1		RED - YELLOW	N/A	M.Ohms
		YELLOW - BLUE	N/A	M.Ohms
	✓	BLUE - RED	N/A	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
		BLUE - NEUTRAL	N/A	M.Ohms
		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
	✓	NEUTRAL - EARTH	100+	M.Ohms
Flash Voltage.	2500V/1 MINUTE			

EARTH CONTINUITY.

Earth Continuity Test		<input type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input type="checkbox"/>
Cable to Equipment		<input type="checkbox"/>
Cable to Terminals		<input type="checkbox"/>

SHROUDING.

Live Terminals	N/A	<input type="checkbox"/>
Switches and Pilot Lights	N/A	<input type="checkbox"/>
Unenclosed Equipment	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses		<input type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENSCONTRACT NUMBER : S98057PANEL : SMOKE DAMPER CONTROL PANEL SCP / G / N

TASKS TO CHECK


INITIALS

a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>CJC</u>
d) Cable In Terminals Tight	<u>CJC</u>
e) Control Cable Tightness Correct	<u>CJC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CJC</u>
h) Isolator Connections Torqued/Tight	<u>CJC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CJC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CJC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed :

6th Jan - 1999P.L


SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/S
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 08-Jan-99
WITNESSED		FOR	DATE

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/S
SIGNATURE	 FOR SYNCHRONISED SYSTEMS	DATE	08-Jan-99
WITNESSED	FOR	DATE	

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
ZONE CONTROLLER		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
	Contactor Ref.	N/A	C.T. Ratio

Ref.	CHILLED WATER & LTHW KWh HEAT MEATER	Contactor(s)	N/A
		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.	Contactor(s)
	Cable Size
	Terminal Size
	Fuse/MCB Type/Size
	Ammeter Scale
Contactor Ref.	C.T. Ratio

Ref.	Contactor(s).	
	Cable Size.	
	Terminal Size.	
	Fuse/MCB Type/Size.	
	Ammeter Scale.	
Contactor Ref.	C.T. Ratio.	


Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref		C.T. Ratio	

Ref.	Contactors	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactors Ref.	C.T. Ratio	

Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/S
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE. 08-Jan-99
WITNESSED		FOR	DATE.

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/G/S
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE: 08-Jan-99
WITNESSED		FOR	DATE:

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No		RED - YELLOW	N/A	M.Ohms	
CLARE MODEL No A203C/213/F SERIAL No 81301	✓	YELLOW - BLUE	N/A	M.Ohms	
		BLUE - RED	N/A	M.Ohms	
		RED - NEUTRAL	100+	M.Ohms	
		YELLOW - NEUTRAL	N/A	M.Ohms	
CLARE MODEL No A203B SERIAL No 82081/A1		BLUE - NEUTRAL	N/A	M.Ohms	
		RED - EARTH	100+	M.Ohms	
		YELLOW - EARTH	N/A	M.Ohms	
		BLUE - EARTH	N/A	M.Ohms	
Flash Voltage	2500V/1 MINUTE	✓	NEUTRAL - EARTH	100+	M.Ohms

EARTH CONTINUITY.

Earth Continuity Test		<input type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input checked="" type="checkbox"/>
Cable to Equipment		<input checked="" type="checkbox"/>
Cable to Terminals		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals	N/A	<input type="checkbox"/>
Switches and Pilot Lights	N/A	<input type="checkbox"/>
Unenclosed Equipment	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : SMOKE DAMPER CONTROL PANEL SCP / G / S


TASKS TO CHECK	INITIALS
a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>CJC</u>
d) Cable In Terminals Tight	<u>CJC</u>
e) Control Cable Tightness Correct	<u>CJC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CJC</u>
h) Isolator Connections Torqued/Tight	<u>CJC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CJC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CJC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed :

6th - Jan - 1999

P.L

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/1/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 15-Jan-99
WITNESSED	FOR		DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE


PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP1/E
SIGNATURE	FOR SYNCHRONISED SYSTEMS		DATE 15-Jan-99
WITNESSED	FOR		DATE

POWER FEEDS

COMPLIANCE

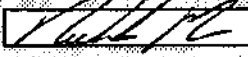
Ref.	CHILLED WATER & LTHW KWh HEAT METER	Contactor(s)	N/A	<input checked="" type="checkbox"/>	
		Cable Size	1mm		<input checked="" type="checkbox"/>
		Terminal Size	4mm		<input checked="" type="checkbox"/>
		Fuse/MCB Type/Size	C60HD104		
		Ammeter Scale	N/A		
Contactor Ref.	N/A	C.T. Ratio	N/A		
Ref.		Contactor(s)		<input type="checkbox"/>	
		Cable Size		<input type="checkbox"/>	
		Terminal Size		<input type="checkbox"/>	
		Fuse/MCB Type/Size		<input type="checkbox"/>	
		Ammeter Scale		<input type="checkbox"/>	
Contactor Ref.		C.T. Ratio		<input type="checkbox"/>	
Ref.		Contactor(s)		<input type="checkbox"/>	
		Cable Size		<input type="checkbox"/>	
		Terminal Size		<input type="checkbox"/>	
		Fuse/MCB Type/Size		<input type="checkbox"/>	
		Ammeter Scale		<input type="checkbox"/>	
Contactor Ref.		C.T. Ratio		<input type="checkbox"/>	
Ref.		Contactor(s)		<input type="checkbox"/>	
		Cable Size		<input type="checkbox"/>	
		Terminal Size		<input type="checkbox"/>	
		Fuse/MCB Type/Size		<input type="checkbox"/>	
		Ammeter Scale		<input type="checkbox"/>	
Contactor Ref.		C.T. Ratio		<input type="checkbox"/>	
Ref.		Contactor(s)		<input type="checkbox"/>	
		Cable Size		<input type="checkbox"/>	
		Terminal Size		<input type="checkbox"/>	
		Fuse/MCB Type/Size		<input type="checkbox"/>	
		Ammeter Scale		<input type="checkbox"/>	
Contactor Ref.		C.T. Ratio		<input type="checkbox"/>	
Ref.		Contactor(s)		<input type="checkbox"/>	
		Cable Size		<input type="checkbox"/>	
		Terminal Size		<input type="checkbox"/>	
		Fuse/MCB Type/Size		<input type="checkbox"/>	
		Ammeter Scale		<input type="checkbox"/>	
Contactor Ref.		C.T. Ratio		<input type="checkbox"/>	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	6 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/1/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 15-Jan-99
WITNESSED	FOR		DATE

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet:		/
Access For Main Incoming Cable.		/
Access For Outgoing Terminals.		/
Suitability Of Gland Plates.		/
Busbars To Specification.	N/A	/
Tightness Of Busbars.	N/A	/
Tightness Of Connections To Busbars.	N/A	/
Tightness of Cables in Terminal Strip and Equipment.		/
Neatness and Size Of Cable Looms.		/
Cleaning Of Wiring.		/
Packing Of Cables In Trunking.		/
Phasing and Marking Of Power Wiring.		/
Ferruling Of Control Wiring.		/
Position Of Instrumentation.		/
Position Of Control Switches.	N/A	/
Position Of Equipment In Panel Requiring Adjustment.		/
Fuse /MCB Charts.		/
Spare Fuses.	N/A	/
Labelling Of Switches, Lights and Terminals.		/
Labelling Of Equipment In Panel.		/
Shrouding Of Unenclosed Equipment.	N/A	/
Shrouding Of Switches and Pilot Lights.	N/A	/
Shrouding Of Live Terminals.	N/A	/
Identification and Isolation Of Incoming Feeds.		/
Ventilation Of Starter Resistors.	N/A	/
Step Controller Settings.	N/A	/
Timeswitch Settings.	N/A	/
Cleaning Of Instrument Capillaries.	N/A	/
Cleaning Of Pneumatic Tubing.	N/A	/
Segregation Of Electronic Equipment From Heat Source.	N/A	/
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	/
Condition Of Paintwork.		/
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	/
Compliance With Wiring Diagrams.		/
Function Check For Interlocking and Sequencing.		/
Cable Entry Top / Bottom.	BOTTOM	/
Equipment Missing.		/
		/
		/
		/
		/

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/1/E
SIGNATURE			DATE 15-Jan-99
WITNESSED	FOR		DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	N/A	M.Ohms
		YELLOW - BLUE	N/A	M.Ohms
CLARE MODEL No A203C/213/F	/	BLUE - RED	N/A	M.Ohms
SERIAL No 81301		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
CLARE MODEL No A203B		BLUE - NEUTRAL	N/A	M.Ohms
SERIAL No 82081/A1		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
Flash Voltage	2500V/1 MINUTE	NEUTRAL - EARTH	100+	M.Ohms

EARTH CONTINUITY.

Earth Continuity Test		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input checked="" type="checkbox"/>
Cable to Equipment		<input checked="" type="checkbox"/>
Cable to Terminals		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals	N/A	<input type="checkbox"/>
Switches and Pilot Lights	N/A	<input type="checkbox"/>
Unenclosed Equipment	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057


PANEL : SMOKE DAMPER CONTROL PANEL SCP/1/E

TASKS TO CHECK	INITIALS
a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>N/A</u>
d) Cable In Terminals Tight	<u>CSC</u>
e) Control Cable Tightness Correct	<u>CSC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CSC</u>
h) Isolator Connections Torqued/Tight	<u>CSC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CSC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CSC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed : 15-1-99

N.M

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/1/W
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE: 15-Jan-99
WITNESSED	_____ FOR		DATE: _____

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE


PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP1/W
SIGNATURE.	<i>[Signature]</i> FOR SYNCHRONISED SYSTEMS		DATE 15-Jan-99
WITNESSED	FOR		DATE

POWER FEEDS

COMPLIANCE

Ref.	CHILLED WATER & LTHW KWh HEAT METER	Contactor(s)	N/A	
		Cable Size	1mm	<input checked="" type="checkbox"/>
		Terminal Size	4mm	<input checked="" type="checkbox"/>
		Fuse/MCB Type/Size	C60HD104	<input checked="" type="checkbox"/>
		Ammeter Scale	N/A	
Contactor Ref.	N/A	C.T. Ratio	N/A	
Ref.		Contactor(s)		
		Cable Size		
		Terminal Size		
		Fuse/MCB Type/Size		
		Ammeter Scale		
Contactor Ref.		C.T. Ratio		
Ref.		Contactor(s)		
		Cable Size		
		Terminal Size		
		Fuse/MCB Type/Size		
		Ammeter Scale		
Contactor Ref.		C.T. Ratio		
Ref.		Contactor(s)		
		Cable Size		
		Terminal Size		
		Fuse/MCB Type/Size		
		Ammeter Scale		
Contactor Ref.		C.T. Ratio		
Ref.		Contactor(s)		
		Cable Size		
		Terminal Size		
		Fuse/MCB Type/Size		
		Ammeter Scale		
Contactor Ref.		C.T. Ratio		
Ref.		Contactor(s)		
		Cable Size		
		Terminal Size		
		Fuse/MCB Type/Size		
		Ammeter Scale		
Contactor Ref.		C.T. Ratio		
Ref.		Contactor(s)		
		Cable Size		
		Terminal Size		
		Fuse/MCB Type/Size		
		Ammeter Scale		
Contactor Ref.		C.T. Ratio		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP1/W
SIGNATURE			DATE 15-Jan-99
WITNESSED	FOR		DATE

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		/
Access For Main Incoming Cable.		/
Access For Outgoing Terminals.		/
Suitability Of Gland Plates.		/
Busbars To Specification.	N/A	/
Tightness Of Busbars.	N/A	/
Tightness Of Connections To Busbars.	N/A	/
Tightness of Cables in Terminal Strip and Equipment.		/
Neatness and Size Of Cable Looms.		/
Cleating Of Wiring.		/
Packing Of Cables In Trunking.		/
Phasing and Marking Of Power Wiring.		/
Ferruling Of Control Wiring.		/
Position Of Instrumentation.		/
Position Of Control Switches.	N/A	/
Position Of Equipment In Panel Requiring Adjustment.		/
Fuse /MCB Charts.		/
Spare Fuses.	N/A	/
Labelling Of Switches, Lights and Terminals.		/
Labelling Of Equipment In Panel.		/
Shrouding Of Unenclosed Equipment.	N/A	/
Shrouding Of Switches and Pilot Lights.	N/A	/
Shrouding Of Live Terminals.	N/A	/
Identification and Isolation Of Incoming Feeds.		/
Ventilation Of Starter Resistors.	N/A	/
Step Controller Settings.	N/A	/
Timeswitch Settings.	N/A	/
Cleating Of Instrument Capillaries.	N/A	/
Cleating Of Pneumatic Tubing.	N/A	/
Segregation Of Electronic Equipment From Heat Source.	N/A	/
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	/
Condition Of Paintwork.		/
Common Keys For All Panels / Key Number Reference.	KEY No. 92236	/
Compliance With Wiring Diagrams.		/
Function Check For Interlocking and Sequencing.		/
Cable Entry Top / Bottom.	BOTTOM	/
Equipment Missing.		/
		/
		/
		/
		/

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/1/W
SIGNATURE	<i>[Signature]</i>		DATE 15-Jan-99
WITNESSED	FOR		DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	N/A	M.Ohms
		YELLOW - BLUE	N/A	M.Ohms
CLARE MODEL No A203C/213/F	✓	BLUE - RED	N/A	M.Ohms
SERIAL No 81301		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
CLARE MODEL No A203B		BLUE - NEUTRAL	N/A	M.Ohms
SERIAL No 82081/A1		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
Flash Voltage	2500V/1 MINUTE	NEUTRAL - EARTH	100+	M.Ohms

EARTH CONTINUITY.

Earth Continuity Test.		✓
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TIGHTNESS CHECKS.

BusBar Connections.	N/A	
Cable in Fuse Carriers/MCBs.		✓
Cable to Equipment.		✓
Cable to Terminals.		✓

SHROUDING.

Live Terminals.	N/A	
Switches and Pilot Lights.	N/A	
Unenclosed Equipment.	N/A	
Load Break Isolators and Switchfuses.		✓

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057


PANEL : SMOKE DAMPER CONTROL PANEL SCP/1/W

TASKS TO CHECK	INITIALS
a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>N/A</u>
d) Cable In Terminals Tight	<u>CJC</u>
e) Control Cable Tightness Correct	<u>CJC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CJC</u>
h) Isolator Connections Torqued/Tight	<u>CJC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CJC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CJC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed : 15-1-99

N.M


SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/2/E
SIGNATURE:		FOR SYNCHRONISED SYSTEMS	DATE: 09-Feb-99
WITNESSED:		FOR	DATE:

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/2/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS	DATE	09-Feb-99
WITNESSED	FOR	DATE	

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
ZONE CONTROLLER		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
	Contactor Ref.	N/A	C.T. Ratio

Ref.	CHILLED & LTHW WATER KWh HEAT METER 33VFC/001	Contactor(s).	N/A
		Cable Size.	1mm
		Terminal Size.	4mm
		Fuse/MCB Type/Size.	C60HD104
		Ammeter Scale.	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.	Contactor(s)
	Cable Size
	Terminal Size
	Fuse/MCB Type/Size
	Ammeter Scale
Contactor Ref.	C.T. Ratio

Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.

Ref.		Contactor(s).	
		Cable Size.	
		Terminal Size.	
		Fuse/MCB Type/Size.	
		Ammeter Scale.	
Contactor Ref.		C.T. Ratio.	

Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.

Ref.	Contactor(s).	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size.	
	Ammeter Scale.	
Contactor Ref.	C.T. Ratio.	

Ref.	Contactor(s).	
	Cable Size.	
	Terminal Size.	
	Fuse/MCB Type/Size.	
	Ammeter Scale.	
Contactor Ref.	C.T. Ratio.	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/2/E
SIGNATURE	<i>[Signature]</i> FOR SYNCHRONISED SYSTEMS		DATE: 09-Feb-99
WITNESSED	FOR		DATE:

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables In Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/2/E
SIGNATURE	<i>[Signature]</i> FOR SYNCHRONISED SYSTEMS		DATE 09-Feb-99
WITNESSED	FOR		DATE

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	N/A	M.Ohms
		YELLOW - BLUE	N/A	M.Ohms
CLARE MODEL No A203C/213/F	<input checked="" type="checkbox"/>	BLUE - RED	N/A	M.Ohms
SERIAL No 81301		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
CLARE MODEL No A203B	<input type="checkbox"/>	BLUE - NEUTRAL	N/A	M.Ohms
SERIAL No 82081/A1		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
Flash Voltage.	2500V/1 MINUTE	<input checked="" type="checkbox"/>	NEUTRAL - EARTH	100+ M.Ohms

EARTH CONTINUITY.

Earth Continuity Test	
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TIGHTNESS CHECKS.

BusBar Connections	N/A
Cable in Fuse Carriers/MCBs	
Cable to Equipment	
Cable to Terminals	



SHROUDING.

Live Terminals	N/A
Switches and Pilot Lights	N/A
Unenclosed Equipment	N/A
Load Break Isolators and Switchfuses	



SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : SMOKE DAMPER CONTROL PANEL SCP/2/E

TASKS TO CHECK

INITIALS


a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>N/A</u>
d) Cable In Terminals Tight	<u>CC</u>
e) Control Cable Tightness Correct	<u>CC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CC</u>
h) Isolator Connections Torqued/Tight	<u>CC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed :

8th FEB - 1999

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SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/2/W
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 09-Feb-99
WITNESSED	FOR		DATE

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/2/W
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 09-Feb-99
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.	ZONE CONTROLLER	Contactor(s).	N/A
Cable Size.		1mm	
Terminal Size.		4mm	
Fuse/MCB Type/Size.		C60HB104	
Ammeter Scale		N/A	
Contactor Ref.	N/A	C.T. Ratio.	N/A

Ref.		Contactor(s).	N/A
CHILLED & LTHW WATER		Cable Size.	1mm
KWh HEAT METER		Terminal Size.	4mm
40VFC/001		Fuse/MCB Type/Size.	C60HD104
		Ammeter Scale.	N/A
Contactor Ref.	N/A	C.T. Ratio.	N/A

Ref.	Contactor(s)
	Cable Size
	Terminal Size
	Fuse/MCB Type/Size
	Ammeter Scale
Contactor Ref.	C.T. Ratio

Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.




Ref.	Contactor(s).
	Cable Size.
	Terminal Size.
	Fuse/MCB Type/Size.
	Ammeter Scale.
Contactor Ref.	C.T. Ratio.

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.	Contactor(s)	
	Cable Size	
	Terminal Size	
	Fuse/MCB Type/Size	
	Ammeter Scale	
Contactor Ref.	C.T. Ratio	


Ref.	Contactor(s). Cable Size. Terminal Size. Fuse/MCB Type/Size. Ammeter Scale. C.T. Ratio.
Contactor Ref.	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP12/W
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 09-Feb-99
WITNESSED	 FOR		DATE 

CHECK LIST	REMARKS	COMPLIANCE
Wireman's Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleaning Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleaning Of Instrument Capillaries.	N/A	
Cleaning Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/2/W
SIGNATURE.		FOR SYNCHRONISED SYSTEMS	DATE: 09-Feb-99
WITNESSED.		FOR	DATE:

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	N/A	M.Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301	<input checked="" type="checkbox"/>	YELLOW - BLUE	N/A	M.Ohms
		BLUE - RED	N/A	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
CLARE MODEL No A203B SERIAL No 82081/A1	<input type="checkbox"/>	BLUE - NEUTRAL	N/A	M.Ohms
		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
Flash Voltage	2500V/1 MINUTE	<input checked="" type="checkbox"/> NEUTRAL - EARTH	100+	M.Ohms

EARTH CONTINUITY.

Earth Continuity Test.		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections.	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs.		<input checked="" type="checkbox"/>
Cable to Equipment.		<input checked="" type="checkbox"/>
Cable to Terminals.		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals.	N/A	<input type="checkbox"/>
Switches and Pilot Lights.	N/A	<input type="checkbox"/>
Unenclosed Equipment.	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses.		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENSCONTRACT NUMBER : S98057PANEL : SMOKE DAMPER CONTROL PANEL SCP/2/W


TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>N/A</u>
d) Cable In Terminals Tight	<u>CC</u>
e) Control Cable Tightness Correct	<u>CC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CC</u>
h) Isolator Connections Torqued/Tight	<u>CC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed : 8th FEB - 1999P.L.


SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/3/E
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE: 18-Feb-99
WITNESSED		FOR	DATE:

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/3/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS	DATE	18-Feb-99
WITNESSED	FOR	DATE	

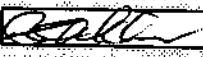
POWER FEEDS

COMPLIANCE

Ref.	ZONE CONTROLLER	Contactor(s)	N/A
		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A
Ref.	CHILLED & LTHW WATER KWh HEAT METER 34/VFC/001 34/VFC/002	Contactor(s)	N/A
		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	
Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/3/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE: 18-Feb-99
WITNESSED	FOR		DATE:

CHECK LIST	REMARKS	COMPLIANCE
Wireman's Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables In Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference.	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/3/E
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE: 18-Feb-99
WITNESSED		FOR	DATE:

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.		RED - YELLOW	N/A	M.Ohms
CLARE MODEL No A203C/213/F SERIAL No 81301		YELLOW - BLUE	N/A	M.Ohms
		BLUE - RED	N/A	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
CLARE MODEL No A203B SERIAL No 82081/A1		BLUE - NEUTRAL	N/A	M.Ohms
		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
Flash Voltage	2500V/1 MINUTE	NEUTRAL - EARTH	100+	M.Ohms

EARTH CONTINUITY.

Earth Continuity Test	
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TIGHTNESS CHECKS.

BusBar Connections	N/A
Cable in Fuse Carriers/MCBs	
Cable to Equipment	
Cable to Terminals	

SHROUDING.

Live Terminals	N/A
Switches and Pilot Lights	N/A
Unenclosed Equipment	N/A
Load Break Isolators and Switchfuses	

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENSCONTRACT NUMBER : S98057PANEL : SCP/3/E

TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight

N/A

b) Busbar Connections Torqued/Tight

N/A

c) Cable In Contactors Tight

N/A

d) Cable In Terminals Tight

CSC

e) Control Cable Tightness Correct

CSC

f) Fuse Links Fitted (Size Checked Also)

N/A

g) MCB's Correct Size

CSC

h) Isolator Connections Torqued/Tight

CSC

i) Overloads Fitted (Size Checked Also)

N/A

j) Paintwork Acceptable

CSC

k) Terminal Shrouds Fitted

N/A

l) Isolator Shrouds Fitted

CSC

m) CT's Fitted (Size Checked Also)

N/A

n) Spare Fuses Fitted

N/A


o) Drawing Wallet/Pocket Fitted

N/A

Date Completed :

18th FEB - 1999PL

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/3/W
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE 18-Feb-99
WITNESSED	FOR		DATE

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE


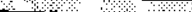

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/3/W
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE: 18-Feb-99
WITNESSED	FOR <div style="border: 1px solid black; width: 100px; height: 20px; margin: 0 auto;"></div>		DATE: <div style="border: 1px solid black; width: 80px; height: 20px; display: inline-block;"></div>

POWER FEEDS

COMPLIANCE

Ref.	Description	Compliance	
	ZONE CONTROLLER		
	Contactor(s)	N/A	
	Cable Size	1mm	
	Terminal Size	4mm	
	Fuse/MCB Type/Size	C60HB104	
	Ammeter Scale	N/A	
Contactor Ref.	N/A	C.T. Ratio	N/A
	CHILLED & LTHW WATER		
	KWh HEAT METER		
	41/VFC/001		
	41/VFC/002		
	Contactor(s)	N/A	
	Cable Size	1mm	
	Terminal Size	4mm	
	Fuse/MCB Type/Size	C60HD104	
	Ammeter Scale	N/A	
Contactor Ref.	N/A	C.T. Ratio	N/A
Ref.			
Ref.			
Ref.			
Ref.			
Ref.			
Ref.			
Ref.			

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP13/W
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 18-Feb-99
WITNESSED	 FOR		DATE. 

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleating Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleating Of Instrument Capillaries.	N/A	
Cleating Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/3/W
SIGNATURE	<i>[Signature]</i> FOR SYNCHRONISED SYSTEMS		DATE. 18-Feb-99
WITNESSED.	FOR		DATE.

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No. CLARE MODEL No A203C/213/F SERIAL No 81301 CLARE MODEL No A203B SERIAL No 82081/A1	<input checked="" type="checkbox"/>	RED - YELLOW	N/A	M.Ohms
		YELLOW - BLUE	N/A	M.Ohms
		BLUE - RED	N/A	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
		BLUE - NEUTRAL	N/A	M.Ohms
		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
		NEUTRAL - EARTH	100+	M.Ohms
Flash Voltage.	2500V/1 MINUTE	<input checked="" type="checkbox"/>		

EARTH CONTINUITY.

Earth Continuity Test		<input checked="" type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs		<input checked="" type="checkbox"/>
Cable to Equipment		<input checked="" type="checkbox"/>
Cable to Terminals		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals	N/A	<input type="checkbox"/>
Switches and Pilot Lights	N/A	<input type="checkbox"/>
Unenclosed Equipment	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENSCONTRACT NUMBER : S98057PANEL : SCP/3/W


TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>N/A</u>
d) Cable In Terminals Tight	<u>CJC</u>
e) Control Cable Tightness Correct	<u>CJC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CJC</u>
h) Isolator Connections Torqued/Tight	<u>CJC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CJC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CJC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed : 18th FEB - 1999PL

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/4E
SIGNATURE.		FOR SYNCHRONISED SYSTEMS	DATE. 02-Mar-99
WITNESSED.		FOR	DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/4E
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE 02-Mar-99
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
	ZONE CONTROLLER	Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	N/A
	CHILLED WATER & LTHW	Cable Size	1mm
	Kw HEAT METER	Terminal Size	4mm
	35/VFC/001	Fuse/MCB Type/Size	C60HD104
	35/VFC/002	Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	


Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/4E
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE: 02-Mar-99
WITNESSED		FOR	DATE:

CHECK LIST	REMARKS	COMPLIANCE
Wireman's Check Sheet:		
Access For Main Incoming Cable:		
Access For Outgoing Terminals:		
Suitability Of Gland Plates:		
Busbars To Specification:	N/A	
Tightness Of Busbars:	N/A	
Tightness Of Connections To Busbars:	N/A	
Tightness of Cables in Terminal Strip and Equipment:		
Neatness and Size Of Cable Looms:		
Cleaning Of Wiring:		
Packing Of Cables In Trunking:		
Phasing and Marking Of Power Wiring:		
Ferruling Of Control Wiring:		
Position Of Instrumentation:		
Position Of Control Switches:	N/A	
Position Of Equipment In Panel Requiring Adjustment:		
Fuse /MCB Charts:		
Spare Fuses:	N/A	
Labelling Of Switches, Lights and Terminals:		
Labelling Of Equipment In Panel:		
Shrouding Of Unenclosed Equipment:	N/A	
Shrouding Of Switches and Pilot Lights:	N/A	
Shrouding Of Live Terminals:	N/A	
Identification and Isolation Of Incoming Feeds:		
Ventilation Of Starter Resistors:	N/A	
Step Controller Settings:	N/A	
Timeswitch Settings:	N/A	
Cleaning Of Instrument Capillaries:	N/A	
Cleaning Of Pneumatic Tubing:	N/A	
Segregation Of Electronic Equipment From Heat Source:	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes:	N/A	
Condition Of Paintwork:		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams:		
Function Check For Interlocking and Sequencing:		
Cable Entry Top / Bottom:	BOTTOM	
Equipment Missing:		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/4E
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE: 02-Mar-99
WITNESSED		FOR	DATE:

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No.	CLARE MODEL No A203C/213/F SERIAL No 81301	<input checked="" type="checkbox"/>	RED - YELLOW	N/A	M.Ohms
			YELLOW - BLUE	N/A	M.Ohms
			BLUE - RED	N/A	M.Ohms
			RED - NEUTRAL	100+	M.Ohms
			YELLOW - NEUTRAL	N/A	M.Ohms
	CLARE MODEL No A203B SERIAL No 82081/A1	<input type="checkbox"/>	BLUE - NEUTRAL	N/A	M.Ohms
			RED - EARTH	100+	M.Ohms
			YELLOW - EARTH	N/A	M.Ohms
			BLUE - EARTH	N/A	M.Ohms
			NEUTRAL - EARTH	100+	M.Ohms
Flash Voltage.	2500V/1 MINUTE	<input checked="" type="checkbox"/>			

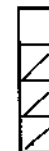
EARTH CONTINUITY.

Earth Continuity Test	
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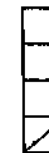
TIGHTNESS CHECKS.

BusBar Connections	N/A
Cable in Fuse Carriers/MCBs	
Cable to Equipment	
Cable to Terminals	



SHROUDING.

Live Terminals	N/A
Switches and Pilot Lights	N/A
Unenclosed Equipment	N/A
Load Break Isolators and Switchfuses	



SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : SMOKE DAMPER CONTROL PANEL SCP/4/E

TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>N/A</u>
d) Cable In Terminals Tight	<u>CC</u>
e) Control Cable Tightness Correct	<u>CC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CC</u>
h) Isolator Connections Torqued/Tight	<u>CC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed : 22nd MARCH - 1999

P.L.

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP1/4/W
SIGNATURE	<i>B. Akhbar</i>	FOR SYNCHRONISED SYSTEMS	DATE: 02-Mar-99
WITNESSED		FOR	DATE:

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/4W
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE: 02-Mar-99
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
	ZONE CONTROLLER	Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
Contactor Ref.		N/A	C.T. Ratio

Ref.		Contactor(s)	N/A
	CHILLED WATER & LTHW Kw HEAT METER 42/VFC/001 42/VFC/002	Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.		N/A	C.T. Ratio

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio


Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.			C.T. Ratio

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/4/W
SIGNATURE.	 FOR SYNCHRONISED SYSTEMS		DATE. 02-Mar-99
WITNESSED.	FOR		DATE.

CHECK LIST	REMARKS	COMPLIANCE
Wiremans Check Sheet		
Access For Main Incoming Cable		
Access For Outgoing Terminals		
Suitability Of Gland Plates		
Busbars To Specification	N/A	
Tightness Of Busbars	N/A	
Tightness Of Connections To Busbars	N/A	
Tightness of Cables in Terminal Strip and Equipment		
Neatness and Size Of Cable Looms		
Cleaning Of Wiring		
Packing Of Cables In Trunking		
Phasing and Marking Of Power Wiring		
Ferruling Of Control Wiring		
Position Of Instrumentation		
Position Of Control Switches	N/A	
Position Of Equipment In Panel Requiring Adjustment		
Fuse /MCB Charts		
Spare Fuses	N/A	
Labelling Of Switches, Lights and Terminals		
Labelling Of Equipment In Panel		
Shrouding Of Unenclosed Equipment	N/A	
Shrouding Of Switches and Pilot Lights	N/A	
Shrouding Of Live Terminals	N/A	
Identification and Isolation Of Incoming Feeds		
Ventilation Of Starter Resistors	N/A	
Step Controller Settings	N/A	
Timeswitch Settings	N/A	
Cleaning Of Instrument Capillaries	N/A	
Cleaning Of Pneumatic Tubing	N/A	
Segregation Of Electronic Equipment From Heat Source	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes	N/A	
Condition Of Paintwork		
Common Keys For All Panels / Key Number Reference	KEY No. 92236	
Compliance With Wiring Diagrams		
Function Check For Interlocking and Sequencing		
Cable Entry Top / Bottom	BOTTOM	
Equipment Missing		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/4/W
SIGNATURE:	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE: 02-Mar-99
WITNESSED:		FOR	DATE:

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No		RED - YELLOW	N/A	M.Ohms
		YELLOW - BLUE	N/A	M.Ohms
CLARE MODEL No A203C/213/F	✓	BLUE - RED	N/A	M.Ohms
SERIAL No 81301		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
CLARE MODEL No A203B		BLUE - NEUTRAL	N/A	M.Ohms
SERIAL No 82081/A1		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
Flash Voltage:	2500V/1 MINUTE	✓	NEUTRAL - EARTH	100+
				M.Ohms

EARTH CONTINUITY.

Earth Continuity Test	
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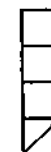
TIGHTNESS CHECKS.

BusBar Connections	N/A
Cable in Fuse Carriers/MCBs	
Cable to Equipment	
Cable to Terminals	



SHROUDING.

Live Terminals	N/A
Switches and Pilot Lights	N/A
Unenclosed Equipment	N/A
Load Break Isolators and Switchfuses	



SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : SMOKE DAMPER CONTROL PANEL SCP/4/W

TASKS TO CHECK

INITIALS


a) Back Stud Connections To Bar Torqued/Tight	<u>N/A</u>
b) Busbar Connections Torqued/Tight	<u>N/A</u>
c) Cable In Contactors Tight	<u>N/A</u>
d) Cable In Terminals Tight	<u>CC</u>
e) Control Cable Tightness Correct	<u>CC</u>
f) Fuse Links Fitted (Size Checked Also)	<u>N/A</u>
g) MCB's Correct Size	<u>CC</u>
h) Isolator Connections Torqued/Tight	<u>CC</u>
i) Overloads Fitted (Size Checked Also)	<u>N/A</u>
j) Paintwork Acceptable	<u>CC</u>
k) Terminal Shrouds Fitted	<u>N/A</u>
l) Isolator Shrouds Fitted	<u>CC</u>
m) CT's Fitted (Size Checked Also)	<u>N/A</u>
n) Spare Fuses Fitted	<u>N/A</u>
o) Drawing Wallet/Pocket Fitted	<u>N/A</u>

Date Completed :

2nd MARCH - 1999

P.L

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/5/E
SIGNATURE		FOR SYNCHRONISED SYSTEMS	DATE 02-Mar-99
WITNESSED		FOR	DATE

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/5/E
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE 02-Mar-99
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.		Contactor(s)	N/A
ZONE CONTROLLER		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	N/A
CHILLED WATER & LTHW Kw HEAT METER 36/VFC/001 36/VFC/002		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	


Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/5/E
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 02-Mar-99
WITNESSED	FOR		DATE

CHECK LIST	REMARKS	COMPLIANCE
Wireman's Check Sheet		
Access For Main Incoming Cable		
Access For Outgoing Terminals		
Suitability Of Gland Plates		
Busbars To Specification	N/A	
Tightness Of Busbars	N/A	
Tightness Of Connections To Busbars	N/A	
Tightness of Cables in Terminal Strip and Equipment		
Neatness and Size Of Cable Looms		
Cleaning Of Wiring		
Packing Of Cables In Trunking		
Phasing and Marking Of Power Wiring		
Ferruling Of Control Wiring		
Position Of Instrumentation		
Position Of Control Switches	N/A	
Position Of Equipment In Panel Requiring Adjustment		
Fuse /MCB Charts		
Spare Fuses	N/A	
Labelling Of Switches, Lights and Terminals		
Labelling Of Equipment In Panel		
Shrouding Of Unenclosed Equipment	N/A	
Shrouding Of Switches and Pilot Lights	N/A	
Shrouding Of Live Terminals	N/A	
Identification and Isolation Of Incoming Feeds		
Ventilation Of Starter Resistors	N/A	
Step Controller Settings	N/A	
Timeswitch Settings	N/A	
Cleaning Of Instrument Capillaries	N/A	
Cleaning Of Pneumatic Tubing	N/A	
Segregation Of Electronic Equipment From Heat Source	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes	N/A	
Condition Of Paintwork		
Common Keys For All Panels / Key Number Reference	KEY No. 92236	
Compliance With Wiring Diagrams		
Function Check For Interlocking and Sequencing		
Cable Entry Top / Bottom	BOTTOM	
Equipment Missing		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5-7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/5/E
SIGNATURE.	FOR SYNCHRONISED SYSTEMS		DATE: 02-Mar-99
WITNESSED.	FOR		DATE:

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No. CLARE MODEL No A203C/213/F SERIAL No 81301 CLARE MODEL No A203B SERIAL No 82081/A1		RED - YELLOW	N/A	M.Ohms
		YELLOW - BLUE	N/A	M.Ohms
	✓	BLUE - RED	N/A	M.Ohms
		RED - NEUTRAL	100+	M.Ohms
		YELLOW - NEUTRAL	N/A	M.Ohms
		BLUE - NEUTRAL	N/A	M.Ohms
		RED - EARTH	100+	M.Ohms
		YELLOW - EARTH	N/A	M.Ohms
		BLUE - EARTH	N/A	M.Ohms
	✓	NEUTRAL - EARTH	100+	M.Ohms
Flash Voltage.	2500V/1 MINUTE			

EARTH CONTINUITY.

Earth Continuity Test.	
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TIGHTNESS CHECKS.

BusBar Connections.	N/A
Cable in Fuse Carriers/MCBs.	
Cable to Equipment	
Cable to Terminals.	



SHROUDING.

Live Terminals.	N/A
Switches and Pilot Lights.	N/A
Unenclosed Equipment.	N/A
Load Break Isolators and Switchfuses.	



SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENS

CONTRACT NUMBER : S98057

PANEL : SMOKE DAMPER CONTROL PANEL SCP/5/E

TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight

N/A

b) Busbar Connections Torqued/Tight

N/A

c) Cable In Contactors Tight

N/A

d) Cable In Terminals Tight

CC

e) Control Cable Tightness Correct

CC

f) Fuse Links Fitted (Size Checked Also)

N/A

g) MCB's Correct Size

CC

h) Isolator Connections Torqued/Tight

CC

i) Overloads Fitted (Size Checked Also)

N/A

j) Paintwork Acceptable

CC

k) Terminal Shrouds Fitted

N/A

l) Isolator Shrouds Fitted

CC

m) CT's Fitted (Size Checked Also)

N/A

n) Spare Fuses Fitted

N/A

o) Drawing Wallet/Pocket Fitted


N/A

Date Completed :

1st MARCH - 1999

P.L

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	6 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCPI5/W
SIGNATURE	 FOR SYNCHRONISED SYSTEMS		DATE. 02-Mar-99
WITNESSED.	FOR		DATE.

DRAWINGS USED FOR TEST

[illegible]

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/5/W
SIGNATURE.	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE. 02-Mar-99
WITNESSED		FOR	DATE

POWER FEEDS

COMPLIANCE

Ref.	ZONE CONTROLLER	Contactor(s)	N/A
		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HB104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.	CHILLED WATER & LTHW Kw HEAT METER 43/VFC/001 43/VFC/002	Contactor(s)	N/A
		Cable Size	1mm
		Terminal Size	4mm
		Fuse/MCB Type/Size	C60HD104
		Ammeter Scale	N/A
Contactor Ref.	N/A	C.T. Ratio	N/A

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

Ref.		Contactor(s)	
		Cable Size	
		Terminal Size	
		Fuse/MCB Type/Size	
		Ammeter Scale	
Contactor Ref.		C.T. Ratio	

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/5/W
SIGNATURE	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE: 02-Mar-99
WITNESSED		FOR	DATE:

CHECK LIST	REMARKS	COMPLIANCE
Wireman's Check Sheet.		
Access For Main Incoming Cable.		
Access For Outgoing Terminals.		
Suitability Of Gland Plates.		
Busbars To Specification.	N/A	
Tightness Of Busbars.	N/A	
Tightness Of Connections To Busbars.	N/A	
Tightness of Cables in Terminal Strip and Equipment.		
Neatness and Size Of Cable Looms.		
Cleaning Of Wiring.		
Packing Of Cables In Trunking.		
Phasing and Marking Of Power Wiring.		
Ferruling Of Control Wiring.		
Position Of Instrumentation.		
Position Of Control Switches.	N/A	
Position Of Equipment In Panel Requiring Adjustment.		
Fuse /MCB Charts.		
Spare Fuses.	N/A	
Labelling Of Switches, Lights and Terminals.		
Labelling Of Equipment In Panel.		
Shrouding Of Unenclosed Equipment.	N/A	
Shrouding Of Switches and Pilot Lights.	N/A	
Shrouding Of Live Terminals.	N/A	
Identification and Isolation Of Incoming Feeds.		
Ventilation Of Starter Resistors.	N/A	
Step Controller Settings.	N/A	
Timeswitch Settings.	N/A	
Cleaning Of Instrument Capillaries.	N/A	
Cleaning Of Pneumatic Tubing.	N/A	
Segregation Of Electronic Equipment From Heat Source.	N/A	
Reinforced Lifting Points and Provision Of Lifting Eyes.	N/A	
Condition Of Paintwork.		
Common Keys For All Panels / Key Number Reference :	KEY No. 92236	
Compliance With Wiring Diagrams.		
Function Check For Interlocking and Sequencing.		
Cable Entry Top / Bottom.	BOTTOM	
Equipment Missing.		

SYNCHRONISED SYSTEMS CONTROL PANEL TEST CERTIFICATE

PROJECT	5 - 7 CARLTON GARDENS		
CONTRACT NO.	S98057	PANEL	SMOKE DAMPER CONTROL PANEL SCP/5/W
SIGNATURE.	<i>[Signature]</i>	FOR SYNCHRONISED SYSTEMS	DATE. 02-Mar-99
WITNESSED.		FOR	DATE.

INSULATION TEST.

COMPLIANCE

Flash Test Instrument No. CLARE MODEL No A203C/213/F SERIAL No 81301 CLARE MODEL No A203B SERIAL No 82081/A1		RED - YELLOW	N/A	M. Ohms
		YELLOW - BLUE	N/A	M. Ohms
	✓	BLUE - RED	N/A	M. Ohms
		RED - NEUTRAL	100+	M. Ohms
		YELLOW - NEUTRAL	N/A	M. Ohms
		BLUE - NEUTRAL	N/A	M. Ohms
		RED - EARTH	100+	M. Ohms
		YELLOW - EARTH	N/A	M. Ohms
		BLUE - EARTH	N/A	M. Ohms
	✓	NEUTRAL - EARTH	100+	M. Ohms
Flash Voltage.	2500V/1 MINUTE			

EARTH CONTINUITY.

Earth Continuity Test		<input type="checkbox"/>
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TIGHTNESS CHECKS.

BusBar Connections.	N/A	<input type="checkbox"/>
Cable in Fuse Carriers/MCBs.		<input checked="" type="checkbox"/>
Cable to Equipment.		<input checked="" type="checkbox"/>
Cable to Terminals.		<input checked="" type="checkbox"/>

SHROUDING.

Live Terminals.	N/A	<input type="checkbox"/>
Switches and Pilot Lights.	N/A	<input type="checkbox"/>
Unenclosed Equipment.	N/A	<input type="checkbox"/>
Load Break Isolators and Switchfuses.		<input checked="" type="checkbox"/>

SYNCHRONISED SYSTEMS LTD

WIREMANS "CHECK SHEET"

CONTRACT : 5 - 7 CARLTON GARDENSCONTRACT NUMBER : S98057PANEL : SMOKE DAMPER CONTROL PANEL SCP/5/W

TASKS TO CHECK

INITIALS

a) Back Stud Connections To Bar Torqued/Tight

N/A

b) Busbar Connections Torqued/Tight

N/A

c) Cable In Contactors Tight

N/A

d) Cable In Terminals Tight

CC

e) Control Cable Tightness Correct

CC

f) Fuse Links Fitted (Size Checked Also)

N/A

g) MCB's Correct Size

CC

h) Isolator Connections Torqued/Tight

CC

i) Overloads Fitted (Size Checked Also)

N/A

j) Paintwork Acceptable

CC

k) Terminal Shrouds Fitted

N/A

l) Isolator Shrouds Fitted

CC

m) CT's Fitted (Size Checked Also)

N/A

n) Spare Fuses Fitted

N/A

o) Drawing Wallet/Pocket Fitted

N/A

Date Completed :

1st MARCH - 1999P.L.