THORSON CONSULTING CERTIFIED PROFESSIONALS

CAN/ULC S1001-11-REV2 Integrated Systems Testing

BOABC – 2026 Conference, Richmond, BC

PRESENTATION OVERVIEW

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- HOW IS INTERGRATED TESTING DIFFERENT THAN LIFE SAFETY TESTING WE CONDUCTED PRE-STANDARD?
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- BUILDING LIFE CYCLE TESTING
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WHAT EXACTLY IS INTEGRATED SYSTEMS TESTING?

- A methodology for verifying and documenting that all interconnections between systems provided for fire protection and life safety are installed and operating in conformance to their design criteria.

BACKGROUND - HOW CAN/ULC S1001-11 CAME TO BE

- In 2010 a Technical Change was made to the 2010 NBCC & NFCC referencing holistic testing or integrated testing. That was the spark that created the standard.
- CAN/ULC S1001-11 was issued in 2011 after a ULC Standards Working Group developed it.
- CAN/ULC S1001-11 was first referenced in the 2015 NBCC and then rolled out to all provincial codes after that.

CAN/ULC S1001 CODE ADOPTION in BC
First included in the 2018 BCBC and the 2019 VBBL and noted in the current 2024 BCBC and the 2025 VBBL

3.2.9. Integrated Fire Protection and Life Safety Systems

3.2.9.1. Testing

1) Where fire protection and life safety systems and systems with fire protection and life safety functions are integrated with each other, they shall be tested as a whole in accordance with CAN/ULC-S1001, "Integrated Systems Testing of Fire Protection and Life Safety Systems," to verify that they have been properly integrated. (See Note A-3.2.9.1.(1).)

The same requirement exists under Article 9.10.1.2 for small buildings under both the 2024 BCBC & 2025 VBBL.

HOW IS INTEGRATED SYSTEMS TESTING DIFFERENT FROM THE LIFE SAFETY TESTING WE HAVE BEEN CONDUCTING AT OCCUPANCY PRIOR TO THE STANDARD?

- The intension of CAN/ULC S1001-11- REV2 is to ensure that the fire and life safety systems within the building are operating as designed for the life of the building. Integrated Testing is required at the original occupancy of a new building, 1 year after the original occupancy and every 5 years for the life of the building.
- An Integrated Testing Coordinator will be retained by the owner to prepare the Integrated Testing plan during the construction phase, which outlines the testing for how all the life safety systems will function in an integrated fashion.
- The Integrated Testing Coordinator will then execute the Integrated Testing which is above and beyond what the typical individual tests have been through the commissioning and finalization of the building and issue an Integrated Testing Report to the owner and Authority Having Jurisdiction.

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EXAMPLES OF COMMON INTEGRATED SYSTEMS

- Fire Alarm Systems
- Fire Alarm Monitoring
- Sprinkler Systems
- Standpipe Systems
- Fire Pumps
- Elevators
- Air Handling Units
- Heat Tracing
- Motorized Fire Smoke Dampers
- Audio/Visual or Lighting Systems
- Kitchen Fire Suppression Systems
- Magnetic Hold Open Devices
- Electromagnetic Locks
- Emergency Generators

Testing Plans will vary based on the specifics of each building.

WHAT IS AN INTEGRATED TEST?

- The Integrated Testing Coordinator will design tests that ensures all the individual systems are working together harmoniously, and the proper sequences are triggered from one stage to the next.
- On a very simple level, for example, the test ensures that when a sprinkler head goes off, which sets off the flow switch, which triggers an alarm, which triggers the below grade stair pressurization fans to turn on, which dials out to the monitoring station to deliver the fire alarm signal message.

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WHO DOES THIS IMPACT?

- CAN/ULC S1001-11-REV2
  - Impacts building owners, developers, and engineering firms with an upcoming new construction, or those planning substantial changes to fire protection and life safety systems in existing buildings.
  - Impacts building owners, strata councils and property managers with the requirements of ongoing Integrated Testing for the life of the building. 1 year after original occupancy and every 5 years for the life of the building.

WHO IS RESPONSIBLE FOR RETAINING THE INTEGRATED TESTING COORDINATOR?

- The owner of the Building is the party responsible for retaining the Integrated Testing Coordinator to complete the requirements of CAN/ULC S1001-11- REV2 prior to the original Occupancy.
- For the 1 year post original occupancy and continued testing every 5 years the owner, strata council or building management company would be responsible for retaining the Integrated Testing Coordinator.

QUALIFICATIONS TO BECOME AN INTEGRATED TESTING COORDINATOR

The Integrated Testing Coordinator shall be knowledgeable and experienced in the design, installation and operation of fire protection and life safety systems, and the fire protection and life safety functions of building systems.

The ITC shall have knowledge and understanding of:

- The Codes and Standards that regulate the design and installation of fire protection and life safety systems.
- How individual and integrated fire protection and life safety systems are designed to operate during normal operating conditions and emergency conditions, and
- Methods for validating the intended functionality of integrated fire protection and life safety systems.

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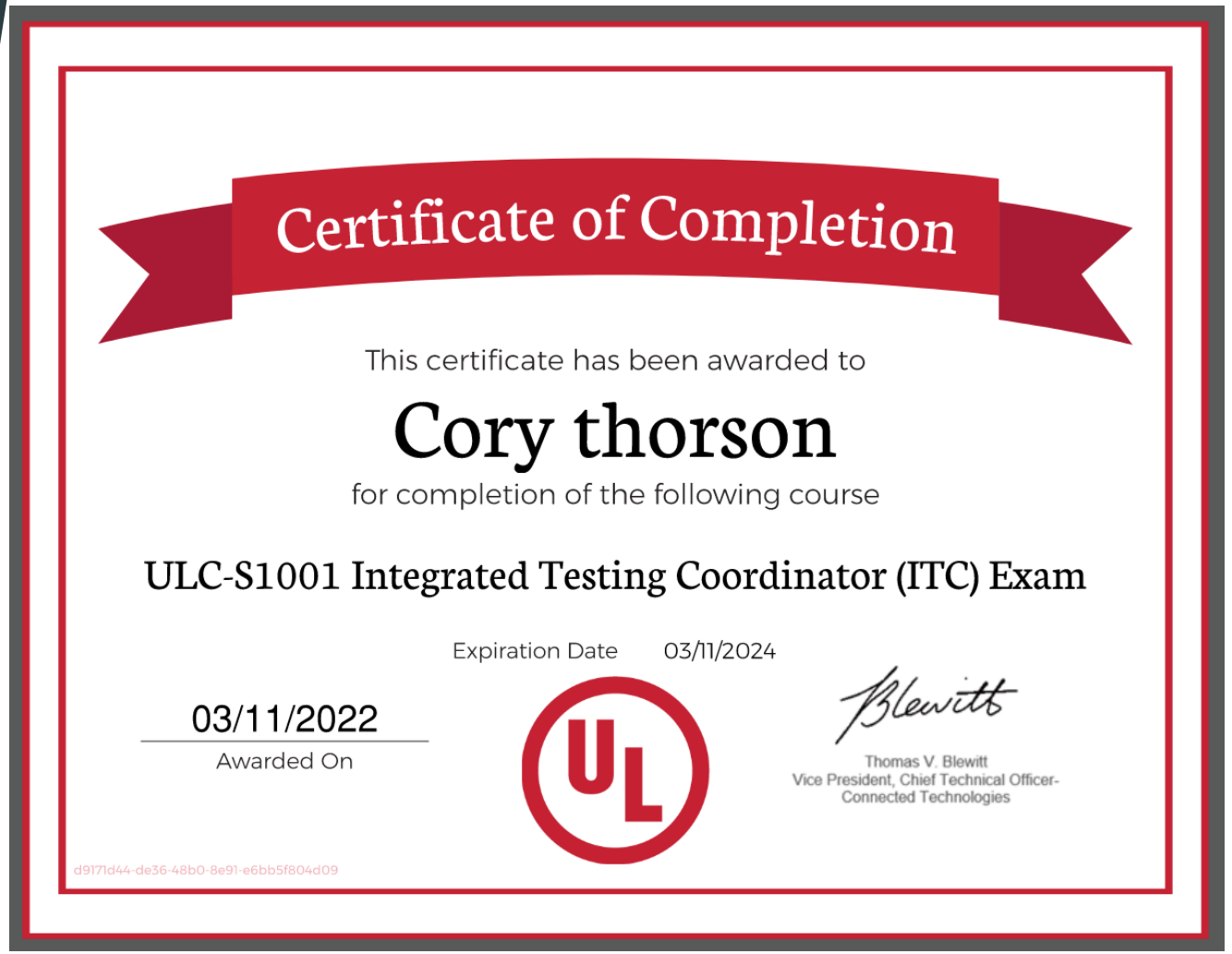
QUALIFICATIONS TO BECOME AN INTEGRATED TESTING COORDINATOR

The Integrated Testing Coordinator shall have all licences and

certificates if required by:

- Contractual Obligations
- Federal, provincial or
- Municipal authorities.



Certificate of Completion

This certificate has been awarded to

Cory thorson

for completion of the following course

ULC-S1001 Integrated Testing Coordinator (ITC) Exam

Expiration Date 03/11/2024

03/11/2022

Awarded On

Thomas V. Blewitt
Vice President, Chief Technical Officer-
Connected Technologies

d9171d44-de36-48b0-8e91-e6bb5f804d09

Party Site No.:	**3740902**
Expires:	**31-Dec-2026**

CERTIFICATE OF COMPLIANCE

THIS IS TO CERTIFY that the Alarm / Service Company identified below is included by - UL Solutions (UL) in its UL Product iQ directories as eligible to use the UL Listing Mark in connection with Certificated Systems. The only evidence of compliance with UL's requirements is the issuance of a UL Certificate for the System and the Certificate is active under UL's Certificate Verification Service. This Certificate does not apply in any way to the communication channel between the protected property and any facility that monitors signals from the protected property.

Listed Service From: NORTH VANCOUVER, BRITISH COLUMBIA

Alarm / Service Company: (3740902)
B.R. THORSON CONSULTING LTD.
769 ROSLYN BLVD
NORTH VANCOUVER, BRITISH COLUMBIA V7G 1P4 CANADA

The Alarm / Service Company is Listed in the following Certificate Service Categories:

File	Vol No.	CCN	Listing Category
S37049	1	HNIB7	Integrated Testing of Fire Protection and Life Safety Systems

To become certified by ULC as an Integrated Systems Testing Provider you must be audited by ULC to ensure they endorse your knowledge and understanding of Integrated Systems.

Underwriters Laboratories

Certificate No:	236234.260519		
File No:	S37049	Revised:	5/19/2026
CCN:	HNIB7	Issued:	5/19/2026

INTEGRATED FIRE PROTECTION AND LIFE SAFETY SYSTEMS CERTIFICATE

This Certifies that the Company detailed below is Listed by ULC and is authorized to administer the coordination of integrated systems testing in compliance with the requirements in the Standard CAN/ULC 1001.

The Service Company named on this certificate must have at least one employed qualified integrated system coordinator, and bears the responsibility for the development of integrated systems testing plan, the integrated systems testing as well as providing these records respecting these activities to the owner / representative. All required services shall be provided for in a written contract between the Service Company and the Subscriber.

ULC makes no representations or warranties, expressed or implied, that the system will prevent any loss by fire, smoke, water damage, or otherwise, or that the system will in all cases provide the protection for which it is installed or intended. The certificate is evidence that the systems have been tested by a ULC Listed Service Company and that it is subject to periodic routine audits by ULC Representatives. This certificate is to be posted at the Subscriber's site and is valid only with a current maintenance contract.

ULC is not an insurer and does not assume any obligation or undertake to discharge any liability of the Service Company or any other party for any loss, which may result from failure of equipment, incorrect installation, non-conformity with requirements, cancellation of this certificate or withdrawal of the Service Company from Listing by ULC.

Protected Property:
VALEO
4756 and 4788 Hastings Street
Vancouver, BC V5C 0P3 CANADA

Service Company:
B.R. Thorson Consulting Ltd.
North Vancouver, BC
CANADA

Next Integrated Testing to be Performed by: 5/19/2031
Authority Having Jurisdiction: City Of Burnaby

Level of Complexity: Level 3
Type of Certification: New

Integrated Systems:

Elevators
Standpipe Systems
Water Supply Control Valves
Electromagnetic Locks
HVAC
Fire Dampers
Sprinkler Systems
Jockey Pumps
Freeze Protection Systems
Hazardous Protection Monitoring Systems
Fire Signal Monitoring System
Emergency Communications System

Integrated Testing Coordinators that are Certified by ULC are able to issue site specific Certificates. I suspect, over time this will become a standard as AHJ's start to request them.

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INTEGRATED TESTING – PLANNING PHASE

- Information gathering from the Design Professionals
- Interconnection Details
- Fire Protection/Life Safety Design Documents.
- Drawings and Specifications
- Descriptions and coordination between systems.
- Mechanical & Electrical Riser Diagrams
- Alternate Solutions

INTEGRATED TESTING- PLANNING PHASE

Preparation of the Integrated Testing Plan

- Functional Objectives of System Integrations
- Sequence of Operation
- Test Protocols and Procedures for Integrated Testing
- Occupant Notification Procedures
- Alternate Safety Measures
- Phased Occupancy (if applicable)
- Distributed to the Design Professionals for Review and Comments
- Distributed to the AHJ for review.

Integrations Matrix - Trails 2B, 520 E. 1st Street, North Vancouver, B.C.

System A	System B	Integration Type	Normal Mode	Off Normal/Fire Mode
Fire Alarm	Fire Signal Receiving Centre	Alarm Condition	No alarm condition on the fire alarm system, no signal at fire signal receiving centre	Alarm condition on the fire alarm system, alarm signal transmitted to and received by fire signal receiving centre
		Supervisory Condition	No supervisory condition on the fire alarm system, no signal at fire signal receiving centre	Supervisory condition on the fire alarm system, supervisory signal transmitted to and received by fire signal receiving centre
		Trouble Condition	No trouble condition on the fire alarm system, no signal at the fire signal receiving centre	Trouble condition on the fire alarm system, trouble signal transmitted to and received by fire signal receiving centre
		Connection Integrity	Signal Receiving Centre disconnect not activated, no signal at fire signal receiving centre	Signal Receiving Centre disconnect activated, trouble transmission signal at fire signal receiving centre
Fire Alarm	Sprinkler System	Water Flow	No water flowing through sprinkler system, no off-normal condition condition on fire alarm	Water flowing through sprinkler system activates water flow switch, unique alarm condition on fire alarm.
		Valve Supervision	Valve in the open position, no-off normal condition on fire alarm.	Valve closed (two turns of valve handle or 10% of valve stem) unique supervisory condition on fire alarm.
Fire Alarm	Standpipe & Hose System	Valve Supervision	Valve in the open position, no-off normal condition on fire alarm.	Valve closed (two turns of valve handle or 10% of valve stem) unique supervisory condition on fire alarm.
Fire Alarm	Elevator	Primary Recall	Relay Normal	Relay Activated for associated fire alarm conditions
		Alternate Recall	Relay Normal	Relay Activated for associated fire alarm conditions
		Top of Shaft Smoke	Relay Normal	Relay Activated for associated fire alarm conditions
		Elevator Pit Heat	Relay Normal	Relay Activated for associated fire alarm conditions
		Machine Room Smoke	Relay Normal	Relay Activated for associated fire alarm conditions
Fire Alarm	CO Vestibule Pressurization - (SF-1 & SF-2)	Shutdown	No alarm condition on the fire alarm system, CO Vestibule Fans SF-1 & SF-2 not in fire mode shutdown.	Duct Smoke Detector activated on the fire alarm system, CO Vestibule Pressurization Fans SF-1 & SF-2 units in fire mode shutdown.
Fire Alarm	Parkade Exhaust & Transfer Fans	Alarm Condition	No alarm condition on the fire alarm system, Parkade Exhaust & Transfer Fans operate on low speed between 7am-9am & 5pm-7pm and are controled by the CO Detectors to automatically turn on to low speed when sensor reads 35 PPM or high speed when sensor hits 85 PPM.	Alarm condition on the fire alarm system, Parkade Exhasut and Transfers fans automatcially turn onto high speed.
Fire Alarm	Heat Tracing	Supervisory Condition	No supervisory condition on the fire alarm system, Normal Power is provided to the building.	Supervisory condition on the fire alarm system, Loss of building power causes loss of power to heat tracing which causes supervisory signal

1. Fire Alarm/Fire Signal Receiving Centre Integrations

Alarm Condition Test Procedure

Normal Mode	1. Review fire signal transmitting unit installation and connection to fire alarm system.
	2. Confirm fire alarm reset and clear off any off-normal conditions
Fire Mode	1. Cause an alarm condition on the fire alarm system
	2. Via telephone or receipt of date/time stamped report, confirm receipt of the alarm condition by the fire signal receiving centre.
	3. Return fire alarm system to normal condition

Supervisory Condition Test Procedure

Normal Mode	1. Review fire signal transmitting unit installation and connection to fire alarm system.
	2. Confirm fire alarm reset and clear off any off-normal conditions
Fire Mode	1. Cause a supervisory condition on the fire alarm system
	2. Via telephone or receipt of date/time stamped report, confirm receipt of the supervisory condition by the fire signal receiving centre.
	3. Return fire alarm system to normal condition

Trouble Condition Test Procedure

Normal Mode	1. Review fire signal transmitting unit installation and connection to fire alarm system.
	2. Confirm fire alarm reset and clear off any off-normal conditions
Fire Mode	1. Cause an trouble condition on the fire alarm system
	2. Via telephone or receipt of date/time stamped report, confirm receipt of the trouble condition by the fire signal receiving centre.
	3. Return fire alarm system to normal condition

Connection Integrity Condition Test Procedure

Normal Mode	1. Review fire signal transmitting unit installation and connection to fire alarm system.
	2. Confirm fire alarm reset and clear off any off-normal conditions
Fire Mode	1. Disconnect the alarm signal connection circuit between the fire alarm control unit and the fire signal transmitting unit.
	2. Via telephone or receipt of date/time stamped report, confirm receipt of the trouble transmission signal by the fire signal receiving centre.
	3. Return fire signal connection circuit between the fire alarm control unit and the fire signal transmitting unit to normal condition.

3. Fire Alarm /Standpipe System

Valve Supervision Condition Test Procedure

Normal Mode	1. Review valve and valve supervision installation.
	2. Confirm fire alarm reset and clear off any off-normal conditions
Fire Mode	1. Operate the valve being tested by operating the handle two full turns for butterfly style valves or closing at least 10% of valve stem for OS&Y style valves.
	2. Confirm correct fire alarm annunciation .
	3. Return valve and fire alarm to normal condition

4. Fire Alarm/ Heat Tracing Integrations

Heat Trace Test Procedure

Normal Mode	1. Review heat trace installation and connection to fire alarm system.
	2. Confirm fire alarm reset and clear off any off-normal conditions
Fire Mode	1. Turn off the circuit breaker for the heat tracing.
	2. Confirm correct fire alarm annunciation .
	3. Reset circuit breaker for the heat tracing to the Normal ON positon and ensure fire alarm system returns to normal condition

5. Fire Alarm/Elevator Integrations

Elevator Primary Recall Test Procedure

Normal Mode	1. Review installation of fire alarm elevator relay to elevator system.
	2. Confirm fire alarm reset and clear off any off-normal conditions
	3.Confirm Elevators 1 & 2 are on a floor other than Primary Recall Level. Primary Recall for Elevator 1 is Level P1, Primary Recall for Elevator 2 is Level 1.
Fire Mode	1. Activate a smoke detector within an elevator lobby other than Level P1 for Elevator 1 Test and other than Level 1 for Elevator 2 Test.
	2. Confirm correct fire alarm annuncation.
	3. Confirm Elevator 1 (under Primary Power) recalls to Level P1. Confirm Elevator 2 (Under Primary Power) recalls to Level 1.
	4. Confirm in Car Buttons do not operate in each elevator cab.
	5. Confirm the in Car Recall light (Fire Hat) is illuminated steady in each elevator cab.
	6. Return the elevator system and fire alarm system to normal condition.

6. Fire Alarm/Air Handling Unit Integrations

CO Vestibule Pressurization Fans SF-1 & SF-2 Test Procedure

Normal Mode	1. Review installation of fire alarm relay connection to CO Vestibule Fans SF-1 & SF-2 (located at Townhouse vestibules to interconnected parkade)
	2. Confirm fire alarm reset and clear off any off-normal conditions
	3.Confirm CO Vestibule Pressurization Unit is Running.
Fire Mode	1. Activate a fire detector (duct smoke)
	2. Confirm correct fire alarm annuncation.
	3. Confirm CO Vestibule Pressurization fan shuts down on fire alarm.
	4. Return the CO Vestibule Pressurization Fans and fire alarm system to normal condition.

7. Fire Alarm/Parkade Exhaust & Transfer Fan Integrations

Parkade Exhaust & Transfer Fan under Alarm Test Procedure

Normal Mode	1. Review installation of fire alarm relay connection to Parkade Exhaust & Transfer Fans.
	2. Confirm fire alarm reset and clear off any off-normal conditions
	3.Confirm Parkade Exhasut & Transfer Fans are either off or running on low speed.
Fire Mode	1. Activate CO detector within the parkade.
	2. Confirm Parkade Exhasut & Transfer fans turn on to HIGH speed when CO sensor hits 85 PPM
	3. Return the Exhaust, Transfer Fans to normal condition.

INTEGRATED TESTING – PRE-IMPLEMENTATION PHASE

Prior to implementing the Integrated Testing Plan

- Receive Verification Documents: Fire Alarm Verification, Material Test Certificates, Generator Test Report, Fire Pump Test Report, etc.
- Receive Inspection Certificates: Elevator Finals.

Pre-Integrated Testing Documents Checklist - Echo - 792 Harbour Way, North Vancouver B.C.	
Document Description	Document Received
Documentation from the verifiying parties confirming that the fire protection and life safety systems, or parts thereof, have be installed in accordance with the design.	
Contractors Material Test Certificate for Under Ground Piping - Sprinkler	◯ YES ◯ NO
Contractors Material Test Certificate for Above Ground Piping - Sprinkle	◯ YES ◯ NO
Contractors Material Test Certificate for Above Ground Piping - Standpip	◯ YES ◯ NO
Fire Alarm System Verification Report per CAN/ULC-S537	◯ YES ◯ NO
ULC Certificate for Protective Signaling Service - Monitoring Station	◯ YES ◯ NO
Heat Trace Commissioning Report	◯ YES ◯ NO
CO Detectors Calibration Certificate	◯ YES ◯ NO
Generator Test Report per CSA C282	◯ YES ◯ NO
Balancing Report for all Life Safety Air Handling Units	◯ YES ◯ NO
E-Comm Commissioning Report	◯ YES ◯ NO
Confirmation on inspection by the local authority responsible for the system.	
Technical Safety BC Elevating Devices Certificate of Inspection	◯ YES ◯ NO

INTEGRATED TESTING – IMPLEMENTATION PHASE

- Implement participant notification (1 weeks notice) to General Contractor & Trades (Electrical, Sprinklers, Elevators & HVAC).
- Perform Integrated Testing Protocols
- Document Testing on Integrated Testing Checklists
- Correct and Re-Test Failed Integrations.
- Input/Output correlation not per the sequence of operation
- Failed devices noted for follow up by Design Professionals
- Return System to Normal conditions
- Prepare Integrated Testing Report for submission to the AHJ and the owner.

Integrated Testing Checklist
Trails 2B- 520 E 1st Street, North Vancouver, BC

Date: NOV. 7 /22

Participants/Role		
Integrated Testing Coordinator:	Company: THORSEN CONSULTING CP	
	Name: CORY THORSEN	
	Signature:	Date: NV 7/22
Owner or Owners Representative:	Company: WALL CENTRE CONSTRUCTION	
	Name: GRANT MYLES	
	Signature:	Date: NOV 7/22
Electrical/Fire Alarm Contractor:	Company: Bert's elec	
	Name: Dayton McTaggart	
	Signature: DM	Date:
Mechanical Contractor:	Company: Cascade metal Design	
	Name: Nick Imrie	
	Signature:	Date: 7/11/2022
Sprinkler/Standpipe Contractor:	Company: SPRINKL-TECH INS	
	Name: ONDREJ KOUBIK	
	Signature:	Date: 7/11/2022
Elevator Contractor:	Company: RICHMOND ELEV.	
	Name: DANTE ALCAZAR	
	Signature:	Date: NOV 07-22

Integrated Systems Testing Protocols and Procedures					
No.	System Integration	Record of Tests		Notes	Initials
ITP Section 1: Fire Alarm/Fire Signal Receiving Centre Integrations: Normal Mode: review fire signal receiving centre installation and confirm correct fire alarm system status. Fire Mode: cause associated condition on fire alarm system and confirm receipt of correct signal at fire signal receiving centre.					
1	Alarm Condition	Normal Mode:	✓ PASS ○ FAIL		CT
		Fire Mode:	✓ PASS ○ FAIL		
2	Supervisory Condition	Normal Mode:	✓ PASS ○ FAIL		CT
		Fire Mode:	✓ PASS ○ FAIL		
3	Trouble Condition	Normal Mode:	✓ PASS ○ FAIL	Panel was always in trouble	CT
		Fire Mode:	○ PASS ✓ FAIL		
4	Connection Integrity	Normal Mode:	✓ PASS ○ FAIL		CT
		Fire Mode:	✓ PASS ○ FAIL		

Integrated Systems Testing Protocols and Procedures				
	System Integration	Record of Tests	Notes	Initials
ITP Section 2: Fire Alarm/Sprinkler System Integrations: Normal Mode: review device installation and confirm correct fire alarm system status. Fire Mode: open valve (two turns or 10% of valve stem) or test flow switch (flow water) and confirm correct operation and fire alarm annunciation.				
5	Main incoming Valve In in Water Entry Room P1	Sprink.Valve No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL		
6	P1 Parking in Water Entry Room	Sprink.Valve No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL Flow Switch No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL		
7	Level 1 - N Building B at Stair 3	Sprink.Valve No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL Flow Switch No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL	bells rg within 34 seconds 25.	
8	Level 1 - NE Building B at Stair 4	Sprink.Valve No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL Flow Switch No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL	bells rg within 27 seconds OK	
9	Level 2 - NE Building B at Stair 4	Sprink.Valve No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL Flow Switch No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL	bells rg within 27 seconds 26	
10	Level 3 - NE Building B at Stair 4	Sprink.Valve No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL Flow Switch No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL	bells rg within 25 seconds OK	
11	Level 4 - NE Building B at Stair 4	Sprink.Valve No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL Flow Switch No. Normal Mode: ✓ PASS ○ FAIL Fire Mode: ✓ PASS ○ FAIL	bells rg within 25 seconds OK	

Integrated Systems Testing Protocols and Procedures					
No.	System Integration	Record of Tests		Notes	Initials
ITP Section 3: Fire Alarm/Standpipe System Integrations: Normal Mode: review fire signal receiving centre installation and confirm correct fire alarm system status. Fire Mode: open valve (two turns or 10% of valve stem) or test flow switch (flow water) and confirm correct operation and fire alarm annunciation.					
21	Stair 1 Shutoff Valve Located on P1 in Stair 1	Sprink.Valve No. Normal Mode: Fire Mode:	☑ PASS ○ FAIL ☑ PASS ○ FAIL		CT
	Stair 2 Shutoff Valve Located on P1 in Stair 2	Sprink.Valve No. Normal Mode: Fire Mode:	☑ PASS ○ FAIL ☑ PASS ○ FAIL		CT
23	Stair 3 Shutoff Valve Located on P1 in Stair 3	Sprink.Valve No. Normal Mode: Fire Mode:	☑ PASS ○ FAIL ☑ PASS ○ FAIL		CT
24	Stair 4 Shutoff Valve Located on P1 in Stair 4	Sprink.Valve No. Normal Mode: Fire Mode:	☑ PASS ○ FAIL ☑ PASS ○ FAIL		CT

Integrated Systems Testing Protocols and Procedures				
No.	System Integration	Record of Tests	Notes	Initials
ITP Section 4: Fire Alarm/Heat Tracing Integrations: Normal Mode: review heat trace installation and confirm correct fire alarm system status. Fire Mode: shut off breaker for heat trace and confirm receipt of correct signal at fire signal receiving centre.				
25	Heat Trace Supervisory P1 Water Entry Room	Normal Mode: ☑ PASS ○ FAIL Fire Mode: ☑ PASS ○ FAIL		CT

Integrated Systems Testing Protocols and Procedures						
No.	System Integration	Record of Tests			Notes	Initials
	Section 5: Fire Alarm/Elevator Integrations: Normal Mode: review elevator installation and confirm correct fire alarm system status. Fire Mode: operate appropriate fire detector and confirm correct elevator operation.					
26	Primary Recall Test Elevator 1	Normal Mode: Fire Mode: Recall Car FA Annunciation Hall Indication	✓ PASS ✓ PASS ✓ PASS ✓ PASS	○ FAIL ○ FAIL ○ FAIL ○ FAIL	Recall to P1 OK	CG
27	Alternate Recall Test Elevator 1	Normal Mode: Fire Mode: Recall Car FA Annunciation Hall Indication	✓ PASS ✓ PASS ✓ PASS ✓ PASS	○ FAIL ○ FAIL ○ FAIL ○ FAIL	Alternate recall to Level 1 OK	CG
28	Top of Shaft Smoke Recall Elevator 1	Normal Mode: Fire Mode: Recall Car FA Annunciation Hall Indication	✓ PASS ✓ PASS ✓ PASS ✓ PASS	○ FAIL ○ FAIL ○ FAIL ○ FAIL	Recall to Level P1 OK	CG
29	Elevator Pit Heat Test Elevator 1	Normal Mode: Fire Mode: Recall Car FA Annunciation Hall Indication	✓ PASS ✓ PASS ✓ PASS ✓ PASS	○ FAIL ○ FAIL ○ FAIL ○ FAIL	Recall to Level 1 OK	CG
30	Machine Room Smoke Test Elevator 1	Normal Mode: Fire Mode: Recall Car FA Annunciation Hall Indication	✓ PASS ✓ PASS ✓ PASS ✓ PASS	○ FAIL ○ FAIL ○ FAIL ○ FAIL	Recall to Level 1 OK	CG
31	Primary Recall Test Elevator 2	Normal Mode: Fire Mode: Recall Car FA Annunciation Hall Indication	✓ PASS ✓ PASS ○ PASS ✓ PASS	○ FAIL ○ FAIL ✓ FAIL ○ FAIL	Recalled to Level 1 OK. LED Annunciation is incorrect 2P Smoke Detector when 2 Lext 2P tripped.	CG
32	Alternate Recall Test Elevator 2	Normal Mode: Fire Mode: Recall Car FA Annunciation Hall Indication	✓ PASS ✓ PASS ✓ PASS ✓ PASS	○ FAIL ○ FAIL ○ FAIL ○ FAIL	Alternate Recall to Level 2 OK	CG

INTEGRATED TESTING REPORT

The final Integrated Testing Report consists of the:

- Integrated Testing Plan
- Documentation collected during Implementation Phase – Commissioning Paperwork.
- Integrated Testing Checklist Forms from Initial Test
- Integrated Testing Checklist Forms from any Re-Tests.
- Conclusion & ULC Certificate (if Integrated Testing Coordinator is Certified by ULC)

INTEGRATED TESTING REPORT

- The Integrated Testing Report must be issued to the AHJ as part of the occupancy permit submission documents prior to booking the Life Safety Testing with the AHJ.
- As the AHJ, ensure that an Integrated Testing Report per CAN/ULC S1001- REV2 is added to your municipal occupancy permit submission documents checklist if not included already.

LIFE CYCLE TESTING

The Integrated Testing Plan is a living document that stays with the building similar to a Fire Safety Plan.

An important consideration with CAN/ULC S1001-11-REV2 is that the intension is to ensure the integrations are maintained for the life of the building and must be completed:

- 1 Year after the initial Occupancy
- Then every 5 years for the life of the Building.

LIFE CYCLE TESTING

Retro Integrated Systems Testing

- CAN/ULC S1001- REV2 is applicable to projects under the 2018/2024 BCBC & 2019/2025 VBBL, it is not retro active to projects under previous versions of these codes.

Integrated Systems Testing for Modifications to an Existing Building

- If you were to embark on a major upgrade of an Existing Building the AHJ would require CAN/ULC S1001-11-REV2 to be implemented at that time.
- Ensure the Integrated Testing Plan is Updated.
- Implement Testing for affected systems
- Tenant Improvement Permits – common integrated systems added to TI's are: Kitchen Fire Suppression Systems, Hold Open Devices, Delayed Egress Maglocks, Additional sprinkler zones.

CRITICAL TAKEAWAYS-

- CAN/ULC S1001-11- REV2 “Integrated Systems Testing” is a requirement for Part 3 & Part 9 buildings under the 2018/2024 BCBC and 2019/2025 VBBL.
- The owner is responsible to retain an Integrated Testing Coordinator to prepare the deliverables “Integrated Testing Report” at Occupancy.
- The Integrated Testing Plan is a living document and will be kept with the Fire Safety Plan and will need to be updated if the building undergoes renovations to life safety systems in the future.
- Integrated Testing is also required to be completed 1 year after the initial occupancy and then every 5 years after that for the life of the building.

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CONSULTING
CERTIFIED
PROFESSIONALS

QUESTIONS?

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