C&C Electrical Mechanical
101-1515 Broadway Street
Port Coquitlam, BC V3C 6M2
604-475-7077

ccelectricalmechanical.com

C&C ELECTRICAL MECHANICAL

advantage
MECHANICAL MAINTENANCE PROGRAM

ELECTRICAL PLANNING REPORT

NWS 58 – SIMON FRASER VILLAGE

This Electrical Planning Report has been produced in partnership with Trace Consulting Group. Data collection has been performed by a C&C Electrical Mechanical Red Seal Electrician, reviewed by our in-house Class A Field Service Representative, and then sent to Trace Consulting Group for final review and Engineer sign-off.

Data collection performed by:

Daniel Gazzola – Journeyman Electrician

C&C Electrical Mechanical Review performed by:

Daniel Gazzola – Class A Field Service Representative

Consulting Engineer:

Firm Name	Trace Consulting Group www.traceconsultinggroup.com	Permit to Practice # 1004834
Project No.	26BC.0344.2	
Date	May 27, 2026	
Authored by:	Kajan Krishnamoorthy, Project Manager	
Reviewed by:	Joe Calabria, P. Eng	Professional Seal & Signature

Table of Contents

INTRODUCTION **4**

BACKGROUND **5**

REGULATORY COMPLIANCE **5**

ASSESSMENT METHODOLOGY **6**

Site visit and data collection 6

Site overview 6

Available documents 6

COMPREHENSIVE ANALYSIS **6**

The current capacity of the electrical system 6

The current peak demand on and spare capacity of the electrical system 7

Electrical capacity needed for non-electric systems 7

Anticipated future electrical capacity needs 8

Recommendations for reducing electrical demand 10

Suggestions for enhancing electrical system capacity 10

An estimate of the electrical capacity with all upgrades applied 10

CONCLUSION **11**

REPORT QUALIFICATIONS **12**

INTRODUCTION

The following Electrical Planning Report has been prepared by C&C Electrical Mechanical in consultation with Trace Consulting Group, aligning with the regulatory mandates stipulated in the Strata Property Act and the Strata Property Regulation. This comprehensive report is a pivotal resource for strata corporations, providing insights into the electrical infrastructure of this Part 3 building as described below:

Detail	Information
Building Address	3202-8950 Ganymede Place, 8901-8962 Orion Place Burnaby, BC V3J 1A1
Building Type	Wood-Frame Low-Rise
Year of Construction	1971
Number of Floors	3
Number of Suites	189
Number of Residential Parking Stalls	189
Number of Visitor Parking Stalls	34

Table 1 – Property Details

In response to the legislative directives set forth by the Strata Property Act, this report endeavors to facilitate compliance while equipping strata council and property owners with essential information for strategic decision-making regarding their electrical systems.

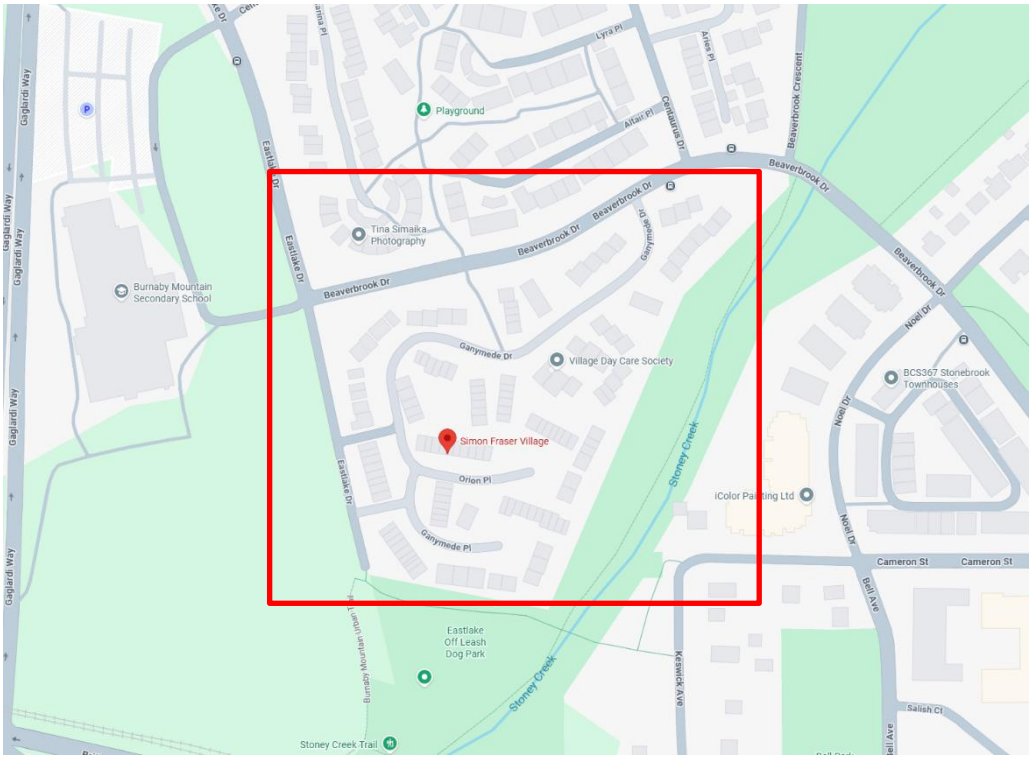

Figure 1 – Location and Visual Representation of the Strata Building via Google Maps

BACKGROUND

The introduction of Electrical Planning Reports (EPRs) under the Strata Property Act signifies a significant regulatory development aimed at enhancing the efficiency and sustainability of strata corporations' electrical infrastructure in British Columbia. Enacted in response to the CleanBC Roadmap's objectives to reduce greenhouse gas emissions and promote energy efficiency, EPRs serve as a proactive measure to align strata communities with broader environmental goals. By requiring strata corporations to assess their current electrical systems and plan for future needs, EPRs facilitate the transition towards cleaner energy sources and the adoption of energy-efficient technologies.

Moreover, the legislative framework surrounding EPRs underscores the importance of informed decision-making and long-term planning within strata communities. Strata corporations are mandated to obtain EPRs to evaluate their electrical systems comprehensively, considering factors such as current capacity, anticipated future demands, and potential measures to enhance efficiency. This regulatory mandate reflects a proactive approach toward addressing evolving energy needs and ensuring the resilience of strata infrastructure in the face of future challenges.

The deadlines for obtaining EPRs, set by the Strata Property Act, provide clear timelines for compliance. Existing Stratas located within specific districts, such as the Capital Regional District, Fraser Valley Regional District, and Metro Vancouver Regional District, must obtain EPRs by December 31, 2026, with extensions available until December 31, 2028, for Stratas located on islands accessible only by air or boat. Similarly, existing Stratas in all other areas of British Columbia have until December 31, 2028, to comply with the EPR requirements. New Stratas, filed after December 31, 2023, have a deadline of five years from the date of filing their strata plan at the Land Title Office to obtain EPRs. This regulatory framework ensures that strata communities across British Columbia have adequate time to assess their electrical infrastructure and plan accordingly, promoting a coordinated and proactive approach towards energy management and sustainability.

Furthermore, the introduction of EPRs necessitates collaboration between strata councils, property managers, and qualified engineering professionals to navigate the complexities of electrical planning effectively. Strata stakeholders must familiarize themselves with the regulatory requirements outlined in the Strata Property Act and associated regulations to ensure compliance and optimize the benefits of EPRs for their communities.

In essence, the background surrounding EPRs reflects a concerted effort to promote sustainability, enhance energy efficiency, and empower strata communities to adapt to an evolving energy landscape. By providing a structured framework for electrical planning, EPRs lay the foundation for a more resilient, efficient, and environmentally conscious built environment in British Columbia's strata properties.

REGULATORY COMPLIANCE

The Electrical Planning Report is prepared to comply with the Strata Property Act (SPA) and the Strata Property Regulation, which govern electrical planning for strata corporations. This section outlines the relevant legislative framework applicable to both standard and complex structures within the strata community.

Regulation	Section
Strata Property Act (SPA)	Section 35(2); Section 90.1(2)(b); Section 92(a)(iii); Section 94.1; Section 96(b)(i)(A)(IV)
Strata Property Regulation	Part 5.2-Electrical Planning Report (Regulations 5.7-5.12); Form B

Table 2 – Applicable Codes and Standards

Other codes applicable in the preparation of this report include:

- Latest Canadian Electrical Code (CEC)
- Latest British Columbia Building Code (BCBC)
- Canadian Standards Association (CSA)

ASSESSMENT METHODOLOGY

Site visit and data collection

The assessment methodology commenced with a detailed site visit. Our team, comprising experienced electricians from C&C Electrical Mechanical, conducted a comprehensive on-site review to gather vital information regarding the electrical infrastructure of SIMON FRASER VILLAGE at 3202-8950 Ganymede Place, 8901-8962 Orion Place Burnaby, BC V3J 1A1 . Through detailed examinations of electrical rooms, electrical distribution equipment, metering systems, and associated components, we aimed to capture a comprehensive snapshot of the existing electrical setup. Additionally, our data collection efforts extended beyond physical inspections to encompass document reviews and interviews with key stakeholders. By leveraging a multi-faceted approach to data collection, we ensured that our assessment was thorough, laying the groundwork for informed decision-making.

Site overview

Following the site visit and data collection phase, our assessment methodology transitioned to a detailed site overview. This stage involved synthesizing the information gathered during the site visit into a coherent understanding of the overall electrical landscape. By analyzing spatial configurations, equipment placements, and infrastructure interconnections, we developed a comprehensive understanding of the site's electrical topology. Moreover, the site overview allowed us to identify potential bottlenecks, vulnerabilities, and areas for improvement within the electrical system. Through meticulous scrutiny and spatial analysis, we strived to uncover insights that informed our subsequent recommendations and strategic planning efforts.

Our site visit consisted of the following:

- Identification of the existing load such as heating, lighting, and mechanical.
- Identification of the existing non-electrical equipment.

Available documents

The following documents were made available and used during our investigation and analysis:

- BC Hydro Load Data

These documents provided invaluable insights into spatial arrangements, historical energy consumption patterns, and the interplay between mechanical systems and the electrical grid. Additionally, our assessment benefited from a detailed understanding of mechanical equipment installations, enabling us to assess their energy requirements and interactions with the electrical system. By synthesizing information from diverse sources, our methodology ensures a nuanced understanding of the property's electrical infrastructure, empowering informed decision-making and strategic planning for future enhancements.

COMPREHENSIVE ANALYSIS

The current capacity of the electrical system

Description	Value	Units
Electrical Room/Closets	28	Amount
Service Transformer Size(s)	(4) 100	kVA
Main Service Ampacity	1,667	A
Current Capacity (@80%)	1,333	A
Main Service Voltage	120/240V	V
Current Capacity (power factor = 0.9)	288	kW

Table 3 – The Current Capacity of the Electrical System

The current peak demand on and spare capacity of the electrical system

To verify the historical peak demand load and available spare power capacity for the main electrical service, we utilized BC Hydro utility data recorded for one year in accordance with Canadian Electrical Code 8-106(9).

As per the BC Hydro historical utility demand data in kWH, a peak consumption of 216kWH. The site is currently supplied with total electrical capacity of 400kVA, provided by four (4) transformers rated at 100kVA each, which serves numerous electrical rooms/closets. Each electrical closet or room is equipped with electrical equipment with a 150A-250A main breaker. Based on all available data, such as the existing service size, main circuit breaker, and BC Hydro utility data, we have compiled the following table to summarize the existing and available power capacity for the strata's electrical system:

Description	Value	Units
Main Service Capacity	288	kW
BC Hydro Peak Consumption (Recorded by BC Hydro Data)	216	kWH
Approximate Hydro Peak Demand (Peak consumption * 1.25)	270	kW
Spare Capacity	18	kW
Spare Capacity in %	6%	%

Table 4 – The Current Peak Demand and Spare Capacity of the Electrical System

The data received from BC Hydro consisted of aggregated peak consumption values expressed in kilowatt-hours (kWh). This data was multiplied by a 125% safety factor, in accordance with BC Hydro and Technical Safety BC guidelines, to derive an approximate Hydro peak demand. This practice provides a safety margin for continuous loads, preventing overheating and potential failures by ensuring conductors and equipment are rated for 125% of the constant load. It accounts for real-world variability, allowing the system to handle unexpected load increases without overloading circuits. Compliance with electrical codes, such as the Canadian Electrical Code (CEC), which mandates this practice, ensures uniform safety standards and legal compliance. The 1.25 factor enhances system longevity and reduces maintenance costs by operating components within safe limits. It also prevents overheating and fire hazards by ensuring temperatures remain within safe limits. Additionally, the extra capacity allows for future load growth without immediate upgrades.

Regarding the peak demand for the electrical system, this data is sourced from BC Hydro, providing a snapshot of the highest level of electricity consumption within the strata corporation. This peak demand encompasses various components of the electrical system, including individual suite consumptions, mechanical systems, house loads, and elevator operations. Within each residential unit, the suite consumptions reflect the electrical usage attributed to appliances, lighting, electronics, and other devices utilized by residents. Mechanical systems entail the electrical demands of heating, cooling, and ventilation systems deployed throughout the building to maintain occupant comfort and air quality. House loads encompass general electrical usage within shared spaces such as common areas, hallways, and amenities. Moreover, the demand attributed to elevator operation is factored in, considering the electrical power necessary for vertical transportation within the building. This comprehensive analysis of peak demand offers insight into the diverse electrical requirements within the strata corporation.

Electrical capacity needed for non-electric systems

During the site walk-through, C&C Electrical Mechanical observed the existing non-electric systems installed and running.

Description	Energy Source	Value	Units
Domestic Hot Water Heaters	Natural Gas	2,415,000	BTU/hr
Heating Boiler Size	Natural Gas	2,535,000	BTU/hr

Table 5 – Electrical Capacity Needed for Non-Electric Systems

Anticipated future electrical capacity needs

Heating, cooling, and ventilation systems that could be modified or installed in the future

According to the directives outlined in the CleanBC Roadmap, there's a clear mandate to transition from traditional energy sources like natural gas to more sustainable alternatives, particularly electricity. In your strata, you currently have several pieces of non-electric equipment, as indicated in Table 5. However, in alignment with CleanBC objectives, we've estimated the anticipated electrical demand for the replacement of these non-electric pieces of equipment. The table below illustrates the estimated demand for these electrical replacements and the resulting spare capacity after installation. This proactive shift towards electric alternatives not only ensures compliance with regulatory standards but also underscores our commitment to sustainability and reduced carbon emissions.

Item	Description	Estimated Demand (kW)	Current Spare Capacity (kW)	Current Spare Capacity (kW) from Table 4	Spare Capacity After Installation (kW)	Building Spare Capacity in %	Comment
Domestic Water Heating	Electric hot Water heaters	708	288	18	-690	-240%	There is not enough capacity for installation
Heating Boilers	Electric Heating Boilers	47	288	18	-29	-10%	There is not enough capacity for installation
Heat Pumps	For suite cooling/heating	1,137	288	18	-1,119	-389%	There is not enough capacity for installation

Table 6 – Heating, Cooling, and Ventilation Systems That Could be Modified or Installed in the Future

The proposed demand load for Heating Boilers Heaters is only for the Amenity buildings such as the Daycare and Recreation area.

EV charging infrastructure that could be installed in the future

Item	Demand (kW)	Demand (kW) (4:1 Ratio for Load Management)	Current Spare Capacity (kW)	Current Spare Capacity (kW) from Table 4	Spare Capacity After EV Installation (kW)	Spare Capacity in%	Comments
EV Charging Infrastructure	1,484	371	288	18	-353	-123%	There is not enough capacity for installation

Table 7 - EV Charging Infrastructure That Could Be Installed in the Future

The proposed installation includes 223 EV charging infrastructure units, with one charger provided for each parking stall.

The installation of EV Charging Infrastructure is increasingly essential due to the rising adoption of electric vehicles (EVs). Integrating EV Charging Infrastructure into the property not only supports this growing demand but also enhances property value and marketability by providing modern, eco-friendly amenities. This initiative aligns with sustainability goals and regulatory requirements aimed at reducing greenhouse gas emissions, with estimates indicating that each EV can reduce CO2 emissions by approximately 4.6 metric tons annually.

Key considerations for successful EV Charging Infrastructure installation include a thorough assessment of the current electrical infrastructure to ensure it can accommodate the additional load from EV charging stations, typically around 6.65 kW per Level 2 charger. In British Columbia, this must be done in compliance with the latest Canadian Electrical Code (CE Code) and the BC Building Code. Implementing load management solutions, such as a 4:1 ratio for load management, can optimize electrical capacity usage, potentially reducing peak demand significantly. Planning for future scalability is crucial given the anticipated increase in EV adoption, with forecasts suggesting that EVs could constitute 58% of global passenger vehicle sales by 2040.

A comprehensive cost assessment, including potential electrical upgrades and exploring funding options or incentives to offset these costs, is vital. Strategic placement of EV Charging Infrastructure ensures convenience and accessibility for residents, and compliance with safety standards such as the Canadian Standards Association (CSA) and specific municipal guidelines is mandatory. Engaging stakeholders, including property managers and residents, is essential for gathering input and ensuring buy-in. Additionally, planning for regular maintenance and support ensures the reliability and longevity of the charging stations. By addressing these factors, the installation of EV Charging Infrastructure can effectively support the transition to sustainable transportation, benefiting both the community and the environment.

i) All the proposed future changes that could be installed in the future

The table below outlines various potential electrical upgrade combinations, reflecting scenarios where different items may be installed in the future. Each scenario's estimated demand (in kW) is calculated by summing the individual items' estimated demands. This estimation considers the combined load of electric hot water heaters, make-up air units, heat pumps, and EV charging infrastructure. The "spare capacity after installation" column quantifies the difference between the estimated demand of the upgrade scenario and the current system's capacity, indicating whether infrastructure upgrades may be necessary to support the increased demand.

Electrical Upgrades	Estimated Demand (kW)	Current Spare Capacity (kW)	Current Spare Capacity (kW) from Table 4	Spare Capacity After Installation (kW)	Spare Capacity in %	Comment
DWH+ Heat Pumps	1,845	288	18	-1,827	-634%	There is not enough capacity for installation
DWH+ EV Charging Infrastructure	1,079	288	18	-1,061	-368%	There is not enough capacity for installation
Heat Pumps+ EV Charging Infrastructure	1,508	288	18	-1,490	-517%	There is not enough capacity for installation
DWH+ Heat Pumps+ EV Charging Infrastructure	2,216	288	18	-2,198	-763%	There is not enough capacity for installation
Heating Boiler + Heat Pumps	1,184	288	18	-1,166	-405%	There is not enough capacity for installation

Heating Boilers + EV Charging Infrastructure	418	288	18	-400	-139%	There is not enough capacity for installation
Heating Boiler + Heat Pumps + EV Charging Infrastructure	1,555	288	18	-1,537	-534%	There is not enough capacity for installation
DWH+ Heat Pumps + Heating Boilers + EV Charging Infrastructure	2,263	288	18	-2,245	-780%	There is not enough capacity for installation

Table 8 – Upgraded System Demand and Spare Capacity in the Future

The proposed demand load for Heating Boilers Heaters is only for the Amenity buildings such as the Daycare and Recreation area.

Recommndations for reducing electrical demand

Item	Description
1	Deploy energy-efficient lighting solutions to minimize electricity demand, utilizing advanced technologies such as LED fixtures and smart lighting controls such as occupancy sensors. This can be applied to the common areas, parkade, and amenity spaces. Owners should also be encouraged to consider LED replacements within each suite.
2	Enhance the building envelope through insulation, weather sealing, and other measures to improve thermal efficiency, reducing the need for heating and cooling and consequently lowering electrical demand.

Table 9 – Steps to Reduce the Demands on the Capacity of the Electrical System

Suggestions for enhancing electrical system capacity

Item	Description
1	Based on a review of BC Hydro peak consumption data, the existing electrical service appears to have available spare capacity. However, a comprehensive load calculation was performed using the building's theoretical load, hydro peak usage in accordance with CEC Section 8-202, assuming all proposed upgrades are implemented. The results of this calculation indicate that the existing service is undersized when evaluated against calculated demand, and a utility service upgrade is therefore required. The building is currently served by four (4) transformers with a total capacity of 400 kVA. Based on the projected electrical demand, an upgrade of the main service transformer's minimum capacity to 4000 kVA is recommended to adequately support both current and future loads. The recommended transformer capacity reflects the next standard available size; however, the final sizing and number of transformers will be determined by BC Hydro in conjunction with detailed engineering design. This assessment shall evaluate impacts to associated transformers, main switchgear, downstream distribution equipment, and upstream utility infrastructure, while accounting for existing loading conditions and projected demand growth. Implementation of the upgraded service is anticipated to require the installation of a new electrical substation. Final configuration, scope, and utility requirements shall be determined during the detailed design phase and through coordination with BC Hydro and the Authority Having Jurisdiction (AHJ).
2	Consider installing a 'kiosk' type substation specifically to handle the EV system install. This will leave as much capacity as possible for internal upgrades such as Domestic Hot Water, MUA, Heat Pumps and Boiler replacements and reduce the service upgrade necessary to accommodate future upgrades.
3	To ensure the safety and efficiency of the upgraded electrical system, it is imperative to upgrade all existing wiring associated with the mentioned equipment with appropriately sized cables capable of handling the increased electrical loads and demands.

Table 10 – Upgrades and Modifications to Increase the Capacity of the Electrical System

An estimate of the electrical capacity with current system and after all upgrades applied

The total demand load was calculated based on BC Hydro peak consumption data, the building's theoretical demand load, and the proposed future load. Calculations assume full implementation of all upgrades and are intended to illustrate the remaining service capacity for both the existing electrical service and the proposed system upgrade. The analysis was performed in accordance with CEC Section 8-202 and is summarized in Table 11. The building's existing total demand load is provided in Table 4 for reference.

Description	Value	Units
Electrical Room/Closets	28	Amount
Service Transformer(s) Capacity After Upgrade	4,000	kVA
Main Service Ampacity After Upgrade	16,667	A
Available Capacity After Upgrade (@80%)	13,333.6	A
Main Service Voltage	120/240	V
Available Capacity after Main Service Upgrade (@80%)(P.f = 0.9)	2,880	kW
Building's Theoretical Existing Demand Load (CEC 8-202)	464	kW
Approximate BC Hydro Peak Demand Load (Based on BC Hydro peak Demand Calculation Guidelines)	270	kW
Proposed Demand Load of Future Upgrades	2,263	kW
Post-Upgrade Spare Capacity Based on Hydro Peak Consumption Data		
Total Demand Load	2,533	kW
Spare Capacity	347	kW
Spare Capacity in %	12.05	%
Post-Upgrade Spare Capacity Based on Building Theoretical Demand Load		
Total Demand Load	2,727	kW
Spare Capacity	153	kW
Spare Capacity in %	5.31	%

Table 11 – The Capacity of the Upgraded System

CONCLUSION

In conclusion, this Electrical Planning Report offers an analysis of the current electrical infrastructure of SIMON FRASER VILLAGE at 3202-8950 Ganymede Place, 8901-8962 Orion Place Burnaby, BC V3J 1A1 . By examining the system's capacity and forecasting future demands, the report provides actionable recommendations to bolster efficiency and accommodate forthcoming requirements.

One significant aspect highlighted in this report is the exploration of various scenarios and combinations for potential upgrades. Through assessments and projections, it is evident that certain combinations of enhancements may strain the existing electrical capacity, posing challenges for implementation. For instance, while individual upgrades like electric domestic water heaters and make-up air units appear feasible based on available spare capacity, the simultaneous installation of heat pumps alongside other systems might exceed the current limits, necessitating a re-evaluation of the proposed modifications.

In response to these findings, the report offers insightful suggestions to navigate these complexities. These recommendations advocate for a strategic approach to upgrades, emphasizing the importance of prioritizing enhancements based on their individual and collective impact on the electrical system. Additionally, it underscores the necessity of conducting detailed assessments to determine the viability and implications of each proposed modification. By adopting a methodical approach and prioritizing

upgrades based on their compatibility with the existing infrastructure, strata councils can effectively enhance the property's electrical system while mitigating risks and ensuring long-term sustainability.

Furthermore, in compliance with the Strata Property Act's Information Certificate (Form B) requirements, it's imperative to include a revised section (p) referencing any obtained Electrical Planning Reports. This ensures transparency and accessibility of crucial information for informed decision-making by all stakeholders.

In essence, by considering the possibilities of various combinations and providing strategic suggestions, this report equips stakeholders with the knowledge and guidance necessary to make informed decisions regarding the enhancement of the building's electrical infrastructure. Through collaborative efforts and diligent planning, the strata community can navigate the complexities of electrical upgrades and pave the way for a more resilient and sustainable future.

REPORT QUALIFICATIONS

This Electrical Planning Report has been prepared by C&C Electrical Mechanical in partnership with Trace Consulting Group. While every effort has been made to ensure its accuracy, neither C&C Electrical Mechanical nor Trace Consulting Group accepts any liability for errors or omissions. Any reliance on this report by third parties is at their own risk. It is intended for the exclusive use of our client and may not be suitable for other purposes without our approval.

END OF REPORT