JOINT PROFESSIONAL PRACTICE GUIDELINES

DESIGN AND INSTALLATION OF ELEVATING DEVICES IN NEW BUILDINGS

VERSION 3.0, NOVEMBER 15, 2023

AIBC
ARCHITECTURAL INSTITUTE OF BRITISH COLUMBIA

ENGINEERS & GEOSCIENTISTS BRITISH COLUMBIA

ARCHITECTURAL INSTITUTE OF BRITISH COLUMBIA

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1. Foreword

These *Joint Professional Practice Guidelines – Design and Installation of Elevating Devices in New Buildings* were developed by the Architectural Institute of BC (AIBC) and Engineers and Geoscientists British Columbia (BC) to guide professional practice related to the design, construction, installation, and commissioning of Elevating Devices in new buildings in BC.

The *British Columbia Building Code* (*BCBC*) and the Vancouver Building By-law (VBBL) contain various provisions pertaining to Elevating Devices. Those provisions must be considered by the Registered Professionals responsible for the design of the building and its systems when they confirm that their scope of work is in substantial compliance with the *BCBC* and/or other applicable enactments respecting safety. Architects and Engineering Professionals are required to design in accordance with all applicable codes and regulations, to perform field review during construction, and to provide assurance that the design and installation of an Elevating Device is substantially compliant with those codes and regulations.

Over the years, changes to the ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators* with respect to how Elevating Devices respond to building fire alarm signals, and changes in Elevating Device technology—in particular the advent of the Machine Room-Less (MRL) Elevator—have made the final acceptance of Elevating Devices more complex. These changes and the increasing complexity were key factors in prioritizing the revision to these guidelines. These guidelines establish expectations and considerations in relation to the specific professional activities for the design and installation of Elevating Devices in new buildings to be followed at the time they were prepared. However, this is a living document that is to be revised and updated as required in the future to reflect the developing state of practice.

The related guidelines, *Joint Professional Practice Guidelines – Alterations of Elevating Devices in Existing Buildings* (AIBC and Engineers and Geoscientists BC 2023) were developed to address the project coordination issues related to Elevating Devices in existing buildings that require either minor or major alterations.

The AIBC and Engineers and Geoscientists BC regulate and govern these professions under the authority of the *Professional Governance Act*. The AIBC and Engineers and Geoscientists BC each have a regulatory mandate to protect the public interest, which is met by setting and maintaining appropriate academic, experience, and professional practice standards**.** One way that the AIBC and Engineers and Geoscientists BC exercise these responsibilities is by publishing professional practice guidelines. These guidelines deal with the performance of specific activities in a manner such that Architects and Engineering Professionals can meet their professional obligations under the *Professional Governance Act* and the Regulations and Bylaws of their respective regulators.

These guidelines were first published in 2016 by Engineers and Geoscientists BC to address uncertainty in the industry regarding which professionals should be taking responsibility for various aspects of an Elevating Device in a new building.

These guidelines were revised in 2020 by Engineers and Geoscientists BC to clarify the responsibilities listed in the Elevating Device Professional Responsibility Matrix (Appendix A, Table A - 1), include an assurance statement related to mechanical systems of new Elevating Devices (Appendix B) to satisfy the requirements of Technical Safety BC for professional assurance, and provide reference to quality management requirements for Engineering Professionals.

This current 2023 revision was prepared jointly by the AIBC and Engineers and Geoscientists BC to clarify the professional relationship between Architects and Engineering Professionals and to further discuss the responsibilities of Architects as they relate to the design and installation of Elevating Devices in new buildings.

2. Definitions

2.1 DEFINED TERMS

The following definitions are specific to these guidelines. These words and terms are capitalized throughout the document:

Architect

An individual who is registered as an architect by the Architectural Institute of British Columbia under the *Professional Governance Act* and entitled to practice the profession of architecture in British Columbia.

Architects Regulation

Architects Regulation, B.C. Reg. 33/2023.

Authority Having Jurisdiction

Defined by the *BCBC* and the *National Building Code of Canada* (NBC) as the governmental body responsible for the enforcement of any part of the *BCBC* or NBC, respectively, or the official or agency designated by that body to exercise such a function. In the Vancouver Building Bylaw (VBBL), it is the City of Vancouver.

Building Code

The building code that applies to the project, which may be the *BCBC*, the VBBL, or the *NBC*.

Bylaws

The Bylaws of the AIBC or the Bylaws of Engineers and Geoscientists BC, made under the *Professional Governance Act.*

Coordinating Registered Professional

Defined in the *BCBC* and VBBL as a Registered Professional retained under Clause 2.2.7.2.(1)(a) of Division C of the *BCBC* or VBBL to coordinate all design and field reviews of the Registered Professionals who are required for a project.

Electrical Engineer

The Engineering Professional with general responsibility for the integrity of the electrical systems in an Elevating Device. The Electrical Engineer may also be, but is not necessarily, the Registered Professional of Record for all items under the electrical discipline on Schedule B of the Letters of Assurance in Division C, Part 2, of the *BCBC* and the VBBL.

Elevating Device

A hoisting and lowering mechanism, equipped with a car guided by rails, that moves between two or more landings for the carrying of passengers and freight.

Elevating Device Consulting Engineer

The Engineering Professional who provides specialized consulting services on issues related to the installation of Elevating Devices. The engagement of an Elevating Device Consulting Engineer depends on the complexity of the project.

Elevating Device Contractor Engineer

The Engineering Professional who takes responsibility for the design and field reviews of the Elevating Device equipment being installed in accordance with the requirement of the ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*. The Elevating Device Contractor Engineer is usually employed or retained by the contractor who supplies the Elevating Device.

Engineering Professional(s)

Professional engineers, professional licensees (engineering), and any other individuals registered or licensed by Engineers and Geoscientists BC as a "professional registrant" as defined in Part 1 of the Engineers and Geoscientists BC Bylaws.

Engineers and Geoscientists BC

The Association of Professional Engineers and Geoscientists of the Province of British Columbia, also operating as Engineers and Geoscientists BC.

Engineers and Geoscientists Regulation

Engineers and Geoscientists Regulation, B.C. Reg. 14/2021.

Fire Suppression Engineer

The Engineering Professional with general responsibility for the integrity of the fire suppression systems associated with an Elevating Device. The Fire Suppression Engineer is the Registered Professional of Record for all items under the fire suppression systems discipline on Schedule B of the Letters of Assurance in Division C, Part 2, of the *BCBC* and the VBBL.

Letters of Assurance

Documents set out in a schedule of Subsection 2.2.7. in Part 2 of Division C of the *BCBC* or VBBL used to confirm and assure code-compliant design and required field reviews by Architects and Engineering Professionals. Otherwise known as Schedules A, B, C-A, and C-B.

Refer to the *Guide to the Letters of Assurance in the BC Building Code 2018 and Vancouver Building By-Law 2019* (Province of BC 2022).

Machine Room-Less Elevator

An elevator designed so that the driving machine for the unit is located in the hoistway rather than in a separate elevator machine room.

Mechanical Engineer

The Engineering Professional with general responsibility for the integrity of the mechanical systems in an Elevating Device. The Mechanical Engineer is the Registered Professional of Record for all items under the mechanical discipline on Schedule B of the Letters of Assurance in Division C, Part 2, of the *BCBC* and the VBBL.

Professional Governance Act

Professional Governance Act [SBC 2018], Chapter 47.

Registered Professional

Defined in the *BCBC* and the VBBL as:

"a) a person who is registered or licensed to practice as an architect under the *Architects Act*, or
b) a person who is registered or licensed to practice as a professional engineer under the *Engineers and Geoscientists Act*."

Registered Professional of Record

Defined in the *BCBC* and the VBBL as a Registered Professional retained to undertake design work and field reviews in accordance with Subsection 2.2.7. of Division C.

Structural Engineer

The Engineering Professional responsible for the structural design of the Elevating Device components, its connections, and its installation. For some or all components, the Structural Engineer is the Registered Professional of Record for all items under the structural discipline on Schedule B of the Letters of Assurance in Division C, Part 2, of the *BCBC* and the VBBL.

Supporting Registered Professional

The Registered Professional providing supplementary design and/or field review services to the Registered Professional of Record for a particular component or sub-component of a discipline. It is recommended that the Registered Professional of Record obtain and retain in the project file any Schedules S-B and S-C from the Supporting Registered Professional, in the form as provided in the *Joint Professional Practice Guidelines – Professional Design and Field Review By Supporting Registered Professionals* (AIBC and Engineers and Geoscientists BC 2020).

Technical Safety BC

An independent, self-funded public body in British Columbia, which is mandated under the *Safety Standards Act* [SBC 2003], Chapter 38, to oversee the safe installation and operation of technical systems and equipment, including Elevating Devices. In addition to issuing permits, licences, and certificates, Technical Safety BC works with industry to reduce safety risks through assessment, education and outreach, enforcement, and research.

2.2 ABBREVIATIONS

AIBC: Architectural Institute of British Columbia

BC: British Columbia

BCBC: British Columbia Building Code

MRL: Machine Room-Less

VBBL: Vancouver Building By-law

STC: sound transmission class

3. Overview

3.1 PURPOSE

This document provides guidance to Architects and Engineering Professionals on the responsibilities of the various professionals involved in the design, construction, installation, and commissioning of Elevating Devices in new buildings.

Following are the specific objectives of these guidelines:

1. Describe the roles and responsibilities of the various participants/stakeholders involved in these professional activities.
2. Define expectations for training and experience required to carry out this professional activity.
3. Provide guidance on the use of assurance documents, such as Letters of Assurance, so the appropriate considerations have been addressed (both regulatory and technical) for the specific professional activities that were carried out.
4. Provide guidance to Engineering Professionals on how to meet the quality management requirements under the *Professional Governance Act* and the Engineers and Geoscientists BC Bylaws when carrying out the professional activities identified in these professional practice guidelines.

3.2 SCOPE

These guidelines are intended to apply solely to projects that deal with the design and installation of Elevating Devices in new buildings, and do not cover projects involving:

- retrofits or renovations of existing buildings;
- retrofits or renovation of existing Elevating Devices;
- ongoing use and maintenance of Elevating Devices;
- the removal of Elevating Devices from existing buildings; or
- Elevating Devices not constructed or installed in a building.

For projects involving the alteration of Elevating Devices in existing buildings, refer to the *Joint Professional Practice Guidelines – Alteration of Elevating Devices in Existing Buildings* (AIBC and Engineers and Geoscientists BC 2023).

Additionally, these guidelines do not provide interpretation of:

- the *BC Building Code* (*BCBC*) or the Vancouver Building By-law (VBBL);
- the *BC Fire Code*;
- the *BC Plumbing Code*;
- the ASME A17.1-2016/CSA B44-16 *Safety Code for Elevators and Escalators* (referred to from here on as CSA B44-16); or
- the *Canadian Electrical Code*.

However, these guidelines do discuss these codes and some commonly encountered issues related to integrating Elevating Device systems into the systems of new buildings.

3.3 APPLICABILITY

These guidelines provide guidance on the responsibilities of the various professionals who carry out the design, construction, installation, and commissioning of Elevating Devices in new buildings.

Architects and Engineering Professionals must exercise professional judgment when providing professional services. As such, application of these guidelines will vary depending on the circumstances, and may also be affected by changes in laws, including legislation (statutes), and regulation, including the *Building Code*, after the publication of these guidelines.

These guidelines may be used to assist in the level of service and terms of reference of an agreement between an Architect or an Engineering Professional and a client.

An Architect's or Engineering Professional's decision not to follow one or more aspects of these guidelines does not necessarily represent a failure to meet their professional obligations. Such judgments and decisions depend upon weighing facts and circumstances to determine whether other reasonable and prudent Architects or Engineering Professionals in similar situations could have conducted themselves similarly.

For Engineering Professionals, failure to meet the intent of these guidelines could be evidence of professional misconduct and lead to disciplinary proceedings by Engineers and Geoscientists BC.

Information for Engineering Professionals on how to appropriately depart from the practice guidance within these guidelines is available in the *Quality Management Guides – Guide to the Standard for the Use of Professional Practice Guidelines* (Engineers and Geoscientists BC 2023a), Section 3.4.2.

For Architects, these guidelines support and clarify the professional standards of practice expected in the provision of architectural services in this area.

3.4 ACKNOWLEDGEMENTS

This document was reviewed by a group of technical experts, and by various advisory groups of the AIBC and Engineers and Geoscientists BC. Contribution to these guidelines does not necessarily indicate the individuals and/or their employers endorse all aspects of these guidelines.

The AIBC and Engineers and Geoscientists BC thank the many registrants and others who contributed to these guidelines for their time and effort in sharing their knowledge and experience. These guidelines form part of the ongoing commitment of the AIBC and Engineers and Geoscientists BC to maintain the quality of professional services that Architects and Engineering Professionals provide to their clients and the public.

Technical Safety BC reviewed these guidelines and provided their endorsement.

4. Roles and Responsibilities

4.1 COMMON FORMS OF PROJECT ORGANIZATION

Project organization varies according to the needs of the project and the parties involved. The design and construction of new buildings generally involves a wide range of Registered Professionals.

Schedule B of the Letters of Assurance from Division C, Part 2 of the *BCBC* and VBBL, Item 1.11 Elevating Devices assigns professional responsibility for Elevating Devices to the individual who provides the required assurances for the architectural discipline—namely, the Architect for a new building construction project.

Since Elevating Devices are complex systems, they also require consideration and input from Registered Professionals with expertise in other disciplines, the need for which should be appropriately identified and coordinated.

Regardless of how the project is organized, the various participants each have certain specific responsibilities, as described below.

4.2 RESPONSIBILITIES

These guidelines summarize the responsibilities of Registered Professionals who are involved in work related to the integration of Elevating Devices with new buildings.

To organize the responsibilities for the various matters related to these projects, a matrix cross-referencing disciplines or areas of responsibilities with the appropriate types of Registered Professionals has been provided in Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (located in Appendix A and referred to as simply Table A-1 from here on).

In addition, Section 6 Quality Management in Professional Practice for Engineering Professionals provides guidance on the quality management responsibilities of Engineering Professionals.

4.2.1 ORGANIZATION OF THE RESPONSIBILITY MATRIX

The matrix in Table A - 1 cross-references the disciplines or areas of responsibility to the appropriate types of Registered Professionals, to clarify which professionals should be taking responsibility for the various aspects of an Elevating Device in a new building.

The following disciplines or areas of responsibilities are involved in the design and installation of Elevating Devices for new buildings; these categories are listed in the rows of Table A - 1:

- Architectural
- Structural engineering
- Seismic engineering
- Mechanical engineering
- Electrical engineering
- Fire suppression engineering
- General Elevating Device engineering

The following Registered Professionals, as well as Technical Safety BC, are involved in the design, construction, installation, and commissioning of a typical Elevating Device; these categories appear in the columns of Table A - 1:

- Architect
- Elevating Device Contractor Engineer
- Elevating Device Consulting Engineer
- Structural Engineer
- Mechanical Engineer
- Electrical Engineer
- Fire Suppression Engineer
- Coordinating Registered Professional

See the Defined Terms section at the beginning of this document for definitions and descriptions of the roles and responsibilities of each of these professionals.

The rows under each discipline in Table A - 1 identify the code references and descriptions that apply to Elevating Devices, and checkmarks in the matrix indicate which Registered Professionals are involved in each activity. Table A - 1 also lists the requirements of the *BCBC*, the VBBL, the CSA B44-16, *Safety Code for Elevators and Escalators*, and the *Elevating Devices Safety Regulation* of the *Safety Standards Act*. Specific clauses or requirements of any referenced standards (for example, CAN/CSA-B355 Lifts for Persons with Physical Disabilities) in these documents are not generally included.

4.2.2 ARCHITECT

The Architect is the Registered Professional of Record who provides the required assurances to the Authority Having Jurisdiction (AHJ) by way of Letters of Assurance for all items under the architectural discipline on Schedule B of the Letters of Assurance in Division C, Part 2, of the *British Columbia Building Code* (*BCBC*) and the Vancouver Building By-law (VBBL) Item 1.11 Elevating Devices of Schedule B is assigned to the architectural discipline. In fulfilling the role of Registered Professional of Record for the Elevating Devices item, the Architect is responsible for determining the extent and type of supporting services that may be required from Supporting Registered Professionals related to the design and installation of the Elevating Device(s).

In addition to the responsibilities outlined in Table A - 1, the Architect is responsible for providing other services related to the design and installation of Elevating Devices in new buildings. The following is a summary of categories under which the Architect's responsibilities fall; details are provided in Appendix C.

Where applicable, the Architect is responsible for:

- Elevating Device general arrangement;
- Elevating Device machine room;
- elevator hoistway;
- elevator exit provisions, including recall levels and exit signs;
- elevator pit design;
- Elevating Device overhead clearance;
- structural alignment of the Elevating Device;
- elevator cab interior;
- elevator door; and
- Elevating Device operation.

4.2.3 ENGINEERING PROFESSIONALS

In addition to the technical professional responsibilities listed in Table A - 1, Engineering Professionals providing services related to Elevating Devices in new buildings have a professional responsibility to uphold the principles outlined in the Engineers and Geoscientists BC *Code of Ethics*, including protection of public safety and the environment.

As such, Engineering Professionals must use a documented approach to identify, assess, and mitigate risks that may impact public safety or the environment when providing professional services. One of the risk factors that must be considered is climate change implications on the building and building services. The Engineering Professional has a responsibility to notify the client of future climate-related risks, reasonable adaptations to lessen the impact of those risks, and the potential impacts should the client refuse to implement the recommended adaptations. The Engineering Professional has a responsibility to be aware of and meet the intent of any climate change requirements imposed by the client or the AHJ.

Furthermore, among other future climate-related risks, the Engineering Professional must consider resiliency related to flood hazards and the flood construction level. Considerations may include locating the elevator control space/machine room above the flood construction level, providing moisture sensors and alarms in flood risk levels, and specifying alternate automatic recall levels in case moisture is detected.

4.2.4 SUPPORTING REGISTERED PROFESSIONALS

Registered Professionals may delegate responsibility for scopes of work to a Supporting Registered Professional, who provides supporting services. Table A - 1 identifies Registered Professionals who may provide supporting services for the various items listed.

Where appropriate, a Supporting Registered Professional may be requested and should be prepared to provide supporting Schedules S-B and S-C in accordance with the *Joint Professional Practice Guidelines – Professional Design and Field Review By Supporting Registered Professionals* (AIBC and Engineers and Geoscientists BC 2020).

4.2.5 AUTHORITY HAVING JURISDICTION

The responsibility for accepting and approving the design, permit application, installation, and operation of Elevating Devices is shared between Technical Safety BC and local governments.

4.2.5.1 Technical Safety BC

Technical Safety BC, a form of authority having jurisdiction, has a regulatory responsibility under the *Safety Standards Act* for Elevating Devices. Regulatory responsibilities include, but are not limited to, issuing installation and operating permits, completing acceptance testing, and conducting incident investigations.

Technical Safety BC inspectors perform acceptance tests related to only the safety and performance of Elevating Devices; they do not perform field review as defined by the *Building Code*.

4.2.5.2 Local Governments

Local Governments (i.e., AHJs) are responsible for determining regulatory compliance with relevant parts of the applicable *Building Code* and for issuing permits for Elevating Devices, including trade permits and building permits.

The AHJ is assured by the Registered Professionals that the design and installation of an Elevating Device substantially complies, in all material respects, with the applicable requirements of the *BCBC* or VBBL, which reference the CSA B44-16, *Safety Code for Elevators and Escalators*, and other applicable enactments regarding safety, and with the plans and other documents supporting an application for a building permit. Professional assurances are to be provided in accordance with Division C, Part 2, Subsection 2.2.7. of the *BCBC* or VBBL.

4.3 ELEVATING DEVICE ASSURANCE STATEMENT

Technical Safety BC requires that an Engineering Professional sign and seal (authenticate) a letter to verify that the relevant mechanical systems of an Elevating Device meet certain *Building Code* requirements. This is outlined in the BC P. Engineers Documentation section of *General Contractors Passenger, Accessibility Lifts and Freight Elevator Pre-Inspection Form 1222* (Technical Safety BC 2022).

Appendix B of these guidelines contains the Elevating Device Assurance Statement that, when completed and submitted by the responsible Engineering Professional, fulfills this requirement.

The purpose of the assurance statement is to confirm that the elevator pit drainage and machine room/space ventilation for a particular project has been designed in accordance with the requirements of Technical Safety BC, the *Elevating Devices Safety Regulation* of the *Safety Standards Act*, the *BC Plumbing Code*, and the CSA B44-16. By means of completing the assurance statement, the Engineering Professional also confirms that the installations have been reviewed on site for substantial conformance to the design.

Note that some Elevating Devices may be designed for and installed in areas where the *National Building Code of Canada* is the applicable code (for example, on federal lands within the province of BC) and where Letters of Assurance are not required. However, Elevating Devices in these areas still require the same level of professional design and field reviews as those in areas where the *BCBC* or the VBBL apply.

The Coordinating Registered Professional should coordinate the completion and submission of this Technical Safety BC assurance statement.

5. Professional Registration & Education, Training, and Experience

5.1 PROFESSIONAL REGISTRATION

The design and field reviews of the installation of Elevating Devices in new buildings that fall within the practices of architecture and professional engineering must be done by appropriately registered and experienced Architects and Engineering Professionals, respectively.

Engineering Professionals have met minimum education, experience, and character requirements for admission to their profession. However, the educational and experience requirements for professional registration do not necessarily constitute an appropriate combination of education and experience for the design and field reviews of the installation of Elevating Devices in new buildings. Professional registration alone does not automatically qualify an Engineering Professional to take professional responsibility for all types and levels of professional services in this professional activity.

It is the responsibility of Architects and Engineering Professionals to determine whether they are qualified by training and/or experience to undertake and accept responsibility for carrying out professional services related to the design and installation of Elevating Devices in new buildings.

5.2 EDUCATION, TRAINING, AND EXPERIENCE

Architects and Engineering Professionals may undertake and accept responsibility for professional assignments only when qualified by education, training, or experience, according to the *Code of Ethics* and Professional Conduct of the Architectural Institute of BC (AIBC) or the *Code of Ethics* of Engineers and Geoscientists BC, respectively.

Appropriate qualifications for Architects and Engineering Professionals must include core competencies that are considered basic and fundamental to the provision of services in their respective disciplines. These core competencies include theoretical and academic knowledge as well as practical experience as described in these guidelines.

The level of education, training, and experience required of Architects and Engineering Professionals must be adequate for the complexity of the project. This competency includes being able to apply informed and professional judgment where risk assessment is required, including by:

- identifying risks and the benefits of alternatives;
- assessing the consequences of the selection of alternatives, decisions, and actions;
- assessing the relative costs of various acceptable alternatives; and
- considering the application and implication of local construction practices.

5.2.1 EDUCATION

Architects and Engineering Professionals must have appropriate theoretical and technical knowledge, gained through education and continuing education, related to the design and installation of Elevating Devices in new buildings. As it relates to the various disciplines, some examples of required knowledge include that of:

- specific *Building Code* requirements for Elevating Devices;
- specific requirements of the CSA B44-16, *Safety Code for Elevators and Escalators* and the *Elevating Devices Safety Regulation* of the *Safety Standards Act* for Elevating Devices; and
- specific *BC Fire Code* and *Canadian Electrical Code* requirements for Elevating Devices.

5.2.2 CONTINUING EDUCATION

In keeping with professional standards set by both professions, Architects and Engineering Professionals must remain current with evolving topics through continuing education. This may include:

- acquiring specific training in the use of software tools;
- attending courses, workshops, seminars, webinars, technical talks, and conferences;
- reading texts and periodicals;
- attending training sessions and/or reading technical documentation and information published by manufacturers; and
- engaging in demonstrable self-study.

6. Quality Management in Professional Practice for Engineering Professionals

6.1 ENGINEERS AND GEOSCIENTISTS BC QUALITY MANAGEMENT REQUIREMENTS

Engineering Professionals must adhere to applicable quality management requirements during all phases of the work, in accordance with the Engineers and Geoscientists BC Bylaws and quality management standards.

To meet the intent of the quality management requirements, Engineering Professionals must establish, maintain, and follow documented quality management policies and procedures for the following activities:

- Use of relevant professional practice guidelines
- Authentication of professional documents by application of the professional seal
- Direct supervision of delegated professional engineering activities
- Retention of complete project documentation
- Regular, documented checks using a written quality control process
- Documented field reviews of engineering designs and/or recommendations during implementation or construction
- Where applicable, documented independent review of structural designs prior to construction
- Where applicable, documented independent review of high-risk professional activities or work prior to implementation or construction

Engineering Professionals employed by a registrant firm are required to follow the quality management policies and procedures implemented by the registrant firm as per the Engineers and Geoscientists BC's permit to practice program.

6.1.1 USE OF PROFESSIONAL PRACTICE GUIDELINES

Engineering Professionals are required to comply with the intent of any applicable professional practice guidelines related to the engineering work they undertake. As such, Engineering Professionals must implement and follow documented procedures to ensure they stay informed of, knowledgeable about, and meet the intent of professional practice guidelines that are relevant to their professional activities or services. These procedures should include periodic checks of the Engineers and Geoscientists BC website to ensure that the latest version of available guidance is being used.

For more information, refer to the *Quality Management Guides – Guide to the Standard for the Use of Professional Practice Guidelines* (Engineers and Geoscientists BC 2023a), which also contains guidance for how an Engineering Professional can appropriately depart from the guidance provided in professional practice guidelines.

6.1.2 AUTHENTICATING DOCUMENTS

Engineering Professionals are required to authenticate (seal with signature and date) all documents, including electronic files, that they prepare or deliver in their professional capacity to others who will rely on the information contained in them. This applies to documents that Engineering Professionals have personally prepared and those that others have prepared under their direct supervision. In addition, any document that is authenticated by an individual Engineering Professional must also have a permit to practice number visibly applied to the document. A permit to practice number is a unique number that a registrant firm receives when they obtain a permit to practice engineering in BC.

Failure to appropriately authenticate and apply the permit to practice number to documents is a breach of the Engineers and Geoscientists BC Bylaws.

For more information, refer to the *Quality Management Guides – Guide to the Standard for the Authentication of Documents* (Engineers and Geoscientists BC 2023b).

6.1.3 DIRECT SUPERVISION

Engineering Professionals are required to directly supervise any engineering work they delegate. When working under the direct supervision of an Engineering Professional, an individual may assist in performing engineering work but may not assume responsibility for it. Engineering Professionals who are professional licensees (engineering) may only directly supervise work within the scope of their licence.

When determining which aspects of the work may be appropriately delegated using the principle of direct supervision, the Engineering Professional having ultimate responsibility for that work should consider:

- the complexity of the project and the nature of the risks associated with the work;
- the training and experience of individuals to whom the work is delegated; and
- the amount of instruction, supervision, and review required.

Careful consideration must be given to delegating field reviews. Due to the complex nature of field reviews, Engineering Professionals with overall responsibility should exercise judgment when relying on delegated field observations, and should conduct a sufficient level of review to have confidence in the quality and accuracy of the field observations. When delegating field review activities, Engineering Professionals must document the field review instructions given to a subordinate. (See Section 6.1.6 Documented Field Reviews During Implementation or Construction).

For more information, refer to the *Quality Management Guides – Guide to the Standard for Direct Supervision* (Engineers and Geoscientists BC 2023c).

6.1.4 RETENTION OF PROJECT DOCUMENTATION

Engineering Professionals are required to establish and maintain documented quality management processes to retain complete project documentation for a minimum of 10 years after the completion of a project or 10 years after an engineering document is no longer in use.

These obligations apply to Engineering Professionals in all sectors. Project documentation in this context includes documentation related to any ongoing engineering work, which may not have a discrete start and end, and may occur in any sector.

Many Engineering Professionals are employed by firms, which ultimately own the project documentation. Engineering Professionals are considered compliant with this quality management requirement when reasonable steps are taken to confirm that (1) a complete set of project documentation is retained by the organizations that employ them, using means and methods consistent with the Engineers and Geoscientists BC Bylaws and quality management standards, and (2) they consistently adhere to the documented policies and procedures of their organizations while employed there.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Retention of Project Documentation* (Engineers and Geoscientists BC 2023d).

6.1.5 DOCUMENTED CHECKS OF ENGINEERING WORK

Engineering Professionals are required to perform a documented quality checking process of engineering work, appropriate to the risk associated with that work. All Engineering Professionals must meet this quality management requirement.

The checking process should be comprehensive and address all stages of the execution of the engineering work. This process would normally involve an internal check by another Engineering Professional within the same organization. Where an appropriate internal checker is not available, an external checker (i.e., one outside the organization) must be engaged. In some instances, self-checking may be appropriate. Where internal, external, or self-checking has been carried out, the details of the check must be documented. The documented quality checking process must include checks of all professional deliverables before being finalized and delivered.

Engineering Professionals are responsible for ensuring that the checks being performed are appropriate to the level of risk associated with the item being checked. Considerations for the level of checking should include:

- the type of item being checked;
- the complexity of the subject matter and underlying conditions related to the item;
- the quality and reliability of associated background information, field data, and elements at risk; and
- the Engineering Professional’s training and experience.

As determined by the Engineering Professional, the individual doing the checking must:

- have current expertise in the discipline of the type of work being checked;
- be sufficiently experienced and have the required knowledge to identify the elements to be checked;
- be objective and diligent in recording observations; and
- understand the checking process and input requirements.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Checks of Engineering and Geoscience Work* (Engineers and Geoscientists BC 2023e).

6.1.6 DOCUMENTED FIELD REVIEWS DURING IMPLEMENTATION OR CONSTRUCTION

Field reviews are reviews conducted at the site of the construction or implementation of the engineering work. They are carried out by an Engineering Professional or a subordinate acting under the Engineering Professional's direct supervision (see Section 6.1.3 Direct Supervision).

Field reviews enable the Engineering Professional to ascertain whether the construction or implementation of the work substantially complies in all material respects with the engineering concepts or intent reflected in the engineering documents prepared for the work.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Field Reviews During Implementation or Construction* (Engineers and Geoscientists BC 2023f).

6.1.7 DOCUMENTED INDEPENDENT REVIEW OF STRUCTURAL DESIGNS

Engineering Professionals developing structural designs are required to engage an independent review of their structural designs. An independent review is a documented evaluation of the structural design concept, details, and documentation based on a qualitative examination of the substantially complete structural design documents, which occurs before those documents are issued for construction or implementation. It is carried out by an experienced Engineering Professional qualified to practice structural engineering, who has not been involved in preparing the design.

The Professional of Record must conduct a risk assessment after conceptual design and before detailed design to (1) determine the appropriate frequency of the independent review(s); and (2) determine if it is appropriate for the independent reviewer to be employed by the same firm as the Professional of Record, or if the independent reviewer should be employed by a different firm.

The risk assessment may determine that staged reviews are appropriate; however, the final independent review must be completed after checking has been completed and before the documents are issued for construction or implementation. Construction must not proceed on any portion of the structure until an independent review of that portion has been completed.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Independent Review of Structural Designs* (Engineers and Geoscientists BC 2023g).

6.1.8 DOCUMENTED INDEPENDENT REVIEW OF HIGH-RISK PROFESSIONAL ACTIVITIES OR WORK

Engineering Professionals must perform a documented risk assessment prior to initiation of a professional activity or work, to determine if that activity or work is high risk and requires a documented independent review.

If the activities or work are deemed high risk, and an independent review is required, the results of the risk assessment must be used to (1) determine the appropriate frequency of the independent review(s), and (2) determine if it is appropriate for the independent reviewer to be employed by the same firm as the Professional of Record, or if the independent reviewer should be employed by a different firm.

The documented independent review of high-risk professional activities or work must be carried out by an Engineering Professional with appropriate experience in the type and scale of the activity or work being reviewed, who has not been involved in preparing the design.

The documented independent review must occur prior to implementation or construction; that is, it must occur before the professional activity or work is submitted to those who will be relying on it.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work* (Engineers and Geoscientists BC 2023h).

6.2 OTHER QUALITY MANAGEMENT REQUIREMENTS

Engineering Professionals must also be aware of any additional quality management requirements from other sources that are relevant to their work, which may include, but are not limited to:

- legislation and regulations at the local, regional, provincial, and federal levels;
- policies of Authorities Having Jurisdiction at the local, regional, provincial, and federal levels;
- agreements and service contracts between clients and Engineering Professionals or their firms; and/or
- standards for engineering firms, particularly those that apply to quality management system certification, such as the ISO 9000 family.

Engineering Professionals should assess any areas of overlap between the Engineers and Geoscientists BC quality management requirements and the requirements of other applicable sources. If the requirements of different sources overlap, Engineering Professionals should attempt to meet the complete intent of all requirements.

Where there are conflicts between requirements, Engineering Professionals should negotiate changes or waivers to any contractual or organizational requirements that may conflict with requirements of legislation, regulations, or the Engineers and Geoscientists BC *Code of Ethics*. Generally, no contractual obligation or organizational policy that may apply to an Engineering Professional will provide justification or excuse for breach of any of the Engineering Professional's obligations under any legislation, regulation, or the Engineers and Geoscientists BC *Code of Ethics*.

Where such conflicts arise and cannot be resolved, Engineering Professionals should consider seeking legal advice from their own legal advisers on their legal rights and obligations in the circumstances of the conflict, and they may also seek practice advice from Engineering and Geoscientists BC on any related ethical dilemma that they may face in the circumstances.

7. Practice Advice

The Architectural Institute of BC (AIBC) and Engineers and Geoscientists BC provide their registrants and others with assistance addressing inquiries related to professional practice and ethics.

Practice advisors at the AIBC and Engineers and Geoscientists BC can answer questions regarding the intent or application of the professional practice or quality management aspects of these guidelines.

- To contact a practice advisor at the AIBC, email practiceadvice@aibc.ca.
- To contact a practice advisor at Engineers and Geoscientists BC, email practiceadvisor@egbc.ca.

8. References and Related Documents

Documents referenced in these guidelines and the appendices appear in Section 8.1 Legislation, Section 8.2 References, and Section 8.3 Codes and Standards.

8.1 LEGISLATION

The following legislation is referenced in these guidelines.

Architects Act [RSBC 1996], Chapter 17.

Architects Regulation, B.C. Reg. 33/023

Engineers and Geoscientists Act [RSBC 1996], Chapter 116.

Engineers and Geoscientists Regulation, B.C. Reg. 14/2021

Professional Governance Act [SBC 2018], Chapter 47.

Safety Standards Act [SBC 2003], Chapter 39.

Safety Standards Act, *Elevating Devices Safety Regulation*, BC Reg. 101//2004.

8.2 REFERENCES

The following documents are referenced in these guidelines.

Architectural Institute of British Columbia (AIBC) and Engineers and Geoscientists BC. 2023 *Joint Professional Practice Guidelines – Alteration of Elevating Devices in Existing Buildings*. Version 1.0. Vancouver and Burnaby, BC: AIBC and Engineers and Geoscientists BC. [accessed:2023 Aug 15]. https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories.

AIBC and Engineers and Geoscientists BC. 2020. *Joint Professional Practice Guidelines – Professional Design and Field Review By Supporting Registered Professionals (including Model Schedules S-B and S-C)*. Version 1.0. Vancouver and Burnaby, BC: AIBC and Engineers and Geoscientists BC. [accessed: 2023 July 17]. https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories.

Engineers and Geoscientists BC. 2023a. *Quality Management Guides – Guide to the Standard for the Use of Professional Practice Guidelines*. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Engineers and Geoscientists BC. 2023b. *Quality Management Guides – Guide to the Standard for Authentication of Documents*. Version 4.0. Burnaby, BC: Engineers and Geoscientists BC.

[accessed:2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Engineers and Geoscientists BC. 2023c. *Quality Management Guides – Guide to the Standard for Direct Supervision*. Version 3.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed:2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Engineers and Geoscientists BC. 2023d. *Quality Management Guides – Guide to the Standard for Retention of Project Documentation*. Version 3.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed:2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Engineers and Geoscientists BC. 2023e. *Quality Management Guides – Guide to the Standard for Documented Checks of Engineering and Geoscience Work*. Version 3.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed 2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Engineers and Geoscientists BC. 2023f. *Quality Management Guides – Guide to the Standard for Documented Field Reviews During Implementation or Construction*. Version 3.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed:2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Engineers and Geoscientists BC. 2023g. *Quality Management Guides – Guide to the Standard for Documented Independent Review of Structural Designs*. Version 3.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed:2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Engineers and Geoscientists BC. 2023h. *Quality Management Guides – Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work*. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed:2023 July 17]. https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides.

Province of BC. 2022. *Guide to the Letters of Assurance in the BC Building Code 2018 and the Vancouver Building By-law 2019*. (Version 6.1: February 11, 2022). Victoria, BC: Building & Safety Standards Branch, Office of Housing and Construction Standards. [accessed: 2023 July 17]. http://www.bccodes.ca/letters-of-assurance.html.

Technical Safety BC. 2022. General Contractors Passenger, Accessibility Lifts and Freight Elevator Pre-inspection Form 1222. [FRM-1222-09 (2022-03-01)]. Vancouver, BC: Technical Safety BC. [accessed: 2023 July 17]. https://assets.contentstack.io/v3/assets/EDGeneralContractor'sPassenger and Freight Elevator Pre-inspection Checklist FRM 1222 2.pdf

Technical Safety BC. 2011. *Directive: Ventilation of Hydraulic Machine Rooms for Lifts for Persons with Physical Disabilities*. Reference number: D-L4 110303 1 (4 March 2011). Vancouver, BC: Technical Safety BC. [accessed: 2023 July 17]. https://www.technicalsafetybc.ca/regulatory-resources/regulatory-notices/directive-ventilation-hydraulic-machine-rooms-lifts-persons-physical-disabilities.

Technical Safety BC. 2020. *Directive: Buried Hydraulic Systems.* Reference number: D-L2 060309 2 (12 February 2020). Vancouver, BC: Technical Safety BC. [accessed 2023 July 17]. https://www.technicalsafetybc.ca/regulatory-resources/regulatory-notices/directive-buried-hydraulic-systems.

8.3 CODES AND STANDARDS

The following codes and standards are referenced in these guidelines.

ASME A17.1/CSA B44, *Safety Code for Elevators and Escalators*.

BC Building and Safety Standards Branch. *BC Building Code 2018*. [accessed: 2023 July 17]. http://www.bccodes.ca/building-code.html.

BC Building and Safety Standards Branch. *BC Plumbing Code 2018*. [accessed: 2023 July 17]. http://www.bccodes.ca/plumbing-code.html.

BC Building and Safety Standards Branch. *BC Fire Code 2018*. [accessed: 2023 July 17]. http://www.bccodes.ca/fire-code.html.

CAN/ULC-S1001, Integrated Systems Testing of Fire Protection and Life Safety Systems.

CSA C22.1-18, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations.

CSA B651, Accessible Design for the Built Environment.

City of Vancouver. 2019. *Vancouver Building By-law 2019*. [accessed: 2023 July 17]. http://www.bccodes.ca/vancouver-bylaws.html.

National Research Council (NRC). 2020. *National Building Code of Canada 2020*. [accessed: 2023 July 26]. https://nrc-publications.canada.ca/eng/view/ft/?id=515340b5-f4e0-4798-be69-692e4ec423e8.

8.4 DOCUMENT AMENDMENT HISTORY

VERSION NUMBER	PUBLISHED DATE	DESCRIPTION OF CHANGES
3.0	November 15, 2023	Revised and updated as joint professional practice guidelines between the AIBC and Engineers and Geoscientists BC, to clarify the professional relationship between Architects and Engineering Professionals, and to expand on the responsibilities of Architects related to the design and installation of Elevating Devices in new buildings.
2.0	September 3, 2020	Revised to clarify the responsibilities listed in Table A-1: Elevating Device Professional Responsibility Matrix for New Construction; add an assurance statement for professional assurance related to mechanical systems in an Elevating Device; and provide reference to quality management requirements. Issued by Engineers and Geoscientists BC, endorsed by the AIBC and Technical Safety BC.
1.0	April 1, 2016	Initial version. Issued by Engineers and Geoscientists BC, endorsed by the AIBC and the British Columbia Safety Authority (now Technical Safety BC).

9. Appendices

APPENDIX A: ELEVATING DEVICE PROFESSIONAL RESPONSIBILITY MATRIX FOR NEW CONSTRUCTION

These guidelines describe the responsibilities of professionals who are involved in work related to the integration of Elevating Devices with new buildings.

To organize the responsibilities for the various matters related to these projects, a matrix has been provided in this appendix as Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction.

This matrix cross-references the disciplines or areas of responsibility to the appropriate types of Registered Professionals, to clarify which professionals should be taking responsibility for various aspects of an Elevating Device in a new building.

The rows under each discipline in Table A - 1 identify the code references and descriptions that apply to Elevating Devices, and checkmarks in the matrix indicate which Registered Professionals are involved in each activity.

The table also lists the requirements of the *BCBC*, the VBBL, the *CSA B44-16*, *Safety Code for Elevators and Escalators*, and the *Elevating Devices Safety Regulation* of the *Safety Standards Act*.

For more information, see Section 4 Roles and Responsibilities of these guidelines.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCHITECT	ELEVATING DEVICE CONTRACTOR ENGINEER	ELEVATING DEVICE CONSULTING ENGINEER	STRUCTURAL ENGINEER	MECHANICAL ENGINEER	ELECTRICAL ENGINEER	FIRE SUPPRESSION ENGINEER	COORDINATING REGISTERED PROFESSIONAL	
	ARCHITECTURAL									
1	• *BCBC*/VBBL, Division B, Table 3.1.13.7. and Sentence 3.1.13.11.(1) • CSA B44-16, section 2.14.2.1.1(a) – Maximum flame-spread ratings for elevator cars	✓	✓							• 75 for walls and ceilings, 300 for floors. • Input is required from the Elevating Device Contractor Engineer.
2	• *BCBC*/VBBL, Division B, Table 3.1.13.7. and Sentence 3.1.13.11.(2) • CSA B44-16, section 2.14.2.1.1(b) – Maximum smoke developed classification for elevator cars	✓	✓							• 450 for walls, ceilings, and floors. • Input is required from the Elevating Device Contractor Engineer.
3	• *BCBC*/VBBL, Division B, Clause 3.2.2.3.(1)(d) – Fire protection for steel members	✓								• Fire protection is not required for steel members for framework around the elevator hoistway doorways, steel members for the support of the elevator and dumbwaiter guides, counterweights, and other similar equipment that are entirely enclosed in an elevator hoistway and are not a part of the structure of the building.
4	• *BCBC*/VBBL, Division B, Clause 3.2.6.5.(3)(b) – Firefighters' elevator – vestibule	✓								• Must be protected with a vestibule containing no occupancy and separated from the remainder of the floor area by a fire separation having a fire-resistance rating of not less than 45 minutes. • Refer to items 5 and 60 of this table.
5	• *BCBC*/VBBL, Division B, Clause 3.2.6.5.(3)(c) – Firefighters' elevator – corridor	✓								• Must be protected with a corridor containing no occupancy and separated from the remainder of the building by a fire separation having a fire-resistance rating of not less than 1 hour. • Refer to items 4 and 60 of this table.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	ARCHITECTURAL (continued)									
6	• *BCBC*/VBBL, Division B, Sentences 3.2.6.5.(1) and (2) • CSA B44-16, section 2.27.3 – Firefighters' elevator – basic requirements	✓	✓	✓			✓			• Provides minimum size and mandatory requirements for firefighters' elevator. • CSA B44-16, section 2.27.3 requires all elevators to be equipped with firefighters' emergency operation.
7	• *BCBC*/VBBL, Division B, Sentence 3.2.8.4.(3) – Elevator hoistway opening into an interconnected floor space	✓				✓				• An exit opening into an interconnected floor space shall be protected at each opening into the interconnected floor space by a vestibule.
8	• *BCBC*/VBBL, Division B, Sentences 3.3.5.4.(1) and 3.3.5.7.(4) – Vestibule required between elevator and storage garage	✓				✓				• For access from a storage garage to a stair or elevator serving occupancies above the level of the storage garage, the access shall be through a vestibule that must a) be not less than 1.8 m long; b) be ventilated i) naturally to outside air by a vent that has an unobstructed area of not less than 0.1 m^2 for each door that opens into the vestibule but not less than 0.4 m^2, or ii) mechanically at a rate of 14 m^3/h for each square metre of vestibule floor surface area; and c) have openings between the vestibule and an adjoining occupancy provided with self-closing doors with no hold-open devices.
9	• *BCBC*/VBBL, Division B, Subclause 3.4.4.2.(2)(e)(iv) • CSA B44-16, section 2.27.3.1.6(a) – Passenger elevators opening into exit lobbies	✓								• Under emergency recall situations, CSA B44-16, section 2.27.3.1.6(a) requires that a car travelling toward the designated level shall continue non-stop to the designated level, and power-operated doors shall open and remain open. • Passenger elevators are permitted to open onto the lobby, provided the elevator doors are designed to remain closed except while loading and unloading passengers.
10	• *BCBC*/VBBL, Division B, Sentence 3.5.2.1.(1) – Requires vertical transportation to comply with the *Elevating Devices Safety Regulation*	✓								• The *Elevating Devices Safety Regulation* mandates compliance with CSA B44-16.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	ARCHITECTURAL (continued)									
11	• *BCBC*/VBBL, Division B, Sentence 3.5.2.1.(3) • CSA B651 – Requirements of CSA B44-16, Appendix E (accessible design)	✓		✓						• While Appendix E to CSA B44-16 is titled as "non-mandatory," barrier-free access is required and enforced under the *BCBC*/VBBL.
12	• *BCBC*/VBBL, Division B, Article 3.5.3.1. and Table 3.5.3.1. • CSA B44-16, section 2.27.3.1.6(a) – Fire separations for elevator hoistways (vertical service space separation between storeys) – Integrity of hoistway fire separation around controller and inspection/testing panels in MRL Elevators	✓								• Under emergency recall situations activated by manual key-operated switches, CSA B44-16, section 2.27.3.1.6(a) requires that a car travelling towards the designated level shall continue non-stop to the designated level and power-operated doors shall open and remain open. • Refer to *BC Building Code* Interpretation Committee Interpretation File No. 12-0095 for hoistway fire separation requirements in MRL Elevators.
13	• *BCBC*/VBBL, Division B, Article 3.5.3.3. • CSA B44-16, sections 2.7.1.1 and 2.7.1.2 – Fire separation between machinery spaces, machine rooms, control spaces, and control rooms and building	✓								• The machine/control room must conform with the applicable codes. It needs to be separated from the elevator hoistway and all other parts of the building by a fire separation having a fire-resistance rating not less than that required for the vertical service space containing the elevator hoistway. • Note that there is a discrepancy[c] between the *BCBC*/VBBL and the CSA B44-16 requirements for MRL Elevators E with a hall jamb mounted controller. • Refer to *BC Building Code* Interpretation Committee Interpretation File No. 12-0095 for fire separation requirements of controllers and other components in MRL Elevators.
14	• *BCBC*/VBBL, Division B, Article 3.5.4.1. – If one or more elevators are provided, each storey with access to an elevator shall be served by at least one elevator, which must accommodate a 2010 x 610 mm stretcher in the prone position and be clearly identified	✓	✓	✓						• This requirement is waived for a limited-use or limited-application elevator designed and installed in accordance with the *Elevating Devices Safety Regulation*.
15	• *BCBC*/VBBL, Division B, Article 3.8.3.7. – A passenger-Elevating Device in an accessible path of travel	✓								• If an elevator is used, it must conform to Appendix E of CSA B44-16. • See also CSA B355.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	ARCHITECTURAL (continued)									
16	• *BCBC*/VBBL, Division B, Articles 5.6.1.1. and 5.7.1.2. – Elevator entrance exposed to the outside	✓							✓	• Protection from precipitation from the outside. • Protection from surface water from the outside.
17	• *BCBC*/VBBL, Division B, Sentence 5.8.1.1.(2) – Protection from noise in residential buildings	✓								• Assemblies and adjoining constructions separating a dwelling unit from an elevator hoistway or a refuse chute shall have a sound transmission class (STC) rating not less than 55.
18	• *BCBC*/VBBL, Division B, Section 3.6. • CSA B44-16, section 2.7.3 – Access to machine rooms and control spaces	✓			✓					• General requirements are found in both codes that apply to the access of the elevator machine rooms. • The requirements of WorkSafeBC also apply.
19	• CSA B44-16, section 2.14.2.3.3 – Observation elevator with glass walls exposed to direct sunlight	✓	✓	✓		✓	✓			• Minimum air handling requirement and auxiliary power source requirement. • To be coordinated with electrical and mechanical, as required.
20	• CSA B44-16, section 2.1.1.2.2(e) – Requirements for glass in elevator hoistways	✓	✓	✓		✓	✓			
21	• CSA B44-16, section 2.11.1.2 – Emergency doors in blind elevator hoistways	✓	✓	✓						• The maximum distance between entrances in a single elevator hoistway is 11 metres.
22	• TSBC Directive No. D-L4 090722 2 – This directive titled “Safety Zone for Elevating Devices” has been rescinded.	✓								• The *BCBC*/VBBL has minimum applicable requirements that apply to accessibility and egress. Refer to Appendix E of CSA B44-16.
	STRUCTURAL ENGINEERING									
23	• *BCBC*/VBBL, Division B, Part 4 • CSA B44-16, section 2.1.2.3 – Support for buffers in pit		✓		✓					• The Elevating Device Contractor Engineer is to provide load requirements to the Structural Engineer.
24	• *BCBC*/VBBL, Division B, Part 4 • CSA B44-16, section 2.9 – Support for elevator equipment		✓		✓					• The Elevating Device Contractor Engineer is to provide load requirements to the Structural Engineer.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	STRUCTURAL ENGINEERING (continued)									
25	• *BCBC*/VBBL, Division B, Part 4 • CSA B44-16, section 2.9 – Machinery and sheave beams, supports, and foundations		✓		✓					• The Elevating Device Contractor Engineer is to provide load requirements to the Structural Engineer.
26	• *BCBC*/VBBL, Division B, Part 4 • CSA B44-16, section 2.11.11.9 – Support for elevator entrance assemblies		✓		✓					• The Elevating Device Contractor Engineer is to provide load requirements to the Structural Engineer.
27	• *BCBC*/VBBL, Division B, Part 4 • CSA B44-16, section 2.23.5.2 – Support for elevator rail brackets	✓	✓		✓					• The Elevating Device Contractor Engineer is to provide load requirements to the Structural Engineer.
28	• *BCBC*/VBBL, Division B, Part 4 • CSA B44-16, section 2.23.5.2 – Fastening detail for elevator rail brackets	✓	✓		✓					
	SEISMIC ENGINEERING									
29	• *BCBC*/VBBL, Division B, Part 4 • CSA B44-16, section 8.4(a)(3) – Determination of seismic requirements based on geographic location	✓	✓		✓					• The submission from the Elevating Device Contractor Engineer to Technical Safety BC requires a check of seismic requirements; therefore, the Elevating Device Contractor Engineer is responsible for this determination. • The Structural Engineer must be aware of the additional load requirements.
30	• *BCBC*/VBBL, Division B, Appendix C – Climatic Data and Seismic Information • CSA B44-16, section 8.4 – Elevator equipped to meet the seismic requirements	✓	✓		✓					• Where required by CSA B44-16, section 8.4.1. and the *BCBC*/VBBL. • Note that there is a discrepancy[c] between the *BCBC*/VBBL and the CSA B44-16 requirements for seismic zoning.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	MECHANICAL ENGINEERING									
31	• *BC Fire Code*, Division B, Part 4 • *Elevating Devices Safety Regulation*, section 42 • TSBC Directive No. D-L4 110303 1 – Hydraulic elevator machinery space/room ventilation	✓				✓				• Hydraulic elevators must be vented directly to the outside. • Indirect venting may be permitted in the *Elevating Devices Safety Regulation*.
32	• TSBC Directive No. D-L4 110303 1 – Ventilation of hydraulic machine rooms for lifts for persons with physical disabilities	✓				✓				• The *Elevating Devices Safety Regulation*, Part 7, Section 42 states: "A hydraulic elevator machine room must be permanently vented, directly or indirectly, to the building exterior."
33	• TSBC Directive No. D-L2 060309 2 – Buried hydraulic systems	✓	✓	✓		✓	✓			• Summarizes the requirements of CSA B44-16 and specifies additional requirements with respect to buried hydraulic systems.
34	• *BC Plumbing Code*, Division B, Article 2.4.3.6. • CSA B44-16, section 2.2 – Pit drains	✓				✓				• Required on all elevators equipped with firefighters' emergency operation.
35	• *BCBC*/VBBL, Division B, Part 6 • CSA B44-16, section 2.7.6.3.2(d) – Machinery space/room environment as determined by elevator original equipment manufacturer	✓				✓				• For conventional machine rooms or the space where the machinery is located at the top of the elevator hoistway. • CSA B44-16 requires the elevator manufacturer to state the temperature and humidity operating ranges.
36	• *BCBC*/VBBL, Division B, Part 6 • CSA B44-16, section 2.7.9.2 – Control space/machinery space environment as determined by the elevator original equipment manufacturer	✓				✓				• Elevator control spaces are not always in the same space as the machinery.
37	• *BCBC*/VBBL, Division B, Sentence 3.2.6.6.(4) – No venting of elevator hoistways to the outdoors by windows, wall panels, smoke shafts, or the building exhaust system	✓	✓			✓				• Smoke venting not permitted. • For machinery heat venting, see *BCBC*/VBBL Division B, Sentence 3.2.6.2.(5).
38	• CSA B44-16, section 2.8.3.4 – No pipes through elevator machinery room and elevator hoistway	✓				✓				• Unless directly related to the elevator.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	MECHANICAL ENGINEERING (continued)									
39	• *BCBC*/VBBL, Division B, Article 3.2.6.2. – Venting via elevator hoistway is not permitted in high buildings	✓				✓				• Smoke venting not permitted. • For machinery heat venting, see *BCBC*/VBBL Division B, Sentence 3.2.6.2.(5).
	ELECTRICAL ENGINEERING									
40	• *Canadian Electrical Code* (C22.1), Section 38 – Elevators, dumbwaiters, material lifts, escalators, moving walks, lifts for persons with physical disabilities, and similar equipment	✓					✓			
41	• *BCBC*/VBBL, Division B, Clause 3.2.6.7.(2)(j) • CSA B44-16, section 2.27.1 – Elevator communication – Communication with central alarm and control facility to telephones in elevator cars	✓	✓	✓			✓		✓	• *BCBC*/VBBL, Division B, Article 3.2.6.7.: For high buildings. • CSA B44-16: – section 2.27.1.1: Telephone required in each elevator. – section 2.27.1.1.4: Additional two-way communication required where the elevator travel is greater than 18 m (travel distance from top to bottom landing). – section 2.27.1.1.6: All elevator phones shall be monitored 24-7 and it is required that the continuity of the phone line be monitored.
42	• *BCBC*/VBBL, Division B, Subsection 3.2.4. • CSA B44-16, section 2.27.3 – Firefighters' emergency operation requirements	✓	✓	✓			✓		✓	• The fire alarm design and connections must meet *BCBC*/VBBL requirements. • CSA B44-16 requires that all new elevators be equipped with firefighters' emergency operation recall including: – manual recall; – automatic recall from the fire alarm system; and – in-car operation.
43	• *BCBC*/VBBL, Sentences 3.2.6.4.(1) and (2) • CSA B44-16, section 2.27.3.1 – Phase 1: Manual firefighters' emergency operation recall	✓	✓	✓			✓		✓	• Provide a three-position key switch at the designated level: On, Off, Reset. • For high buildings, provide an additional recall two-position switch at the central alarm and control facilities: On, Off.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	ELECTRICAL ENGINEERING (continued)									
44	• CSA B44-16, section 2.27.3.2.2(a) – Phase 1: Automatic recall, elevator lobby to designated recall level	✓	✓	✓			✓		✓	• Provide firefighters' emergency operation automatic recall from each level that the elevator serves. • Detectors must be within 6.4 metres of the elevator entrances. • Detectors must be automatic.
45	• CSA B44-16, section 2.27.3.2.4 – Phase 1: Automatic recall from elevator lobby to alternate recall level • *BCBC*/VBBL, Article 3.2.4.14.	✓	✓	✓			✓		✓	• CSA B44-16 requires all elevators to be equipped with automatic alternate recall. • The *BCBC*/VBBL requires automatic alternate recall, regardless of whether the building is sprinklered or not. • Note that there is a discrepancy[c] between the *BCBC*/VBBL and the CSA B44-16 requirements in the sections cited.
46	• CSA B44-16, section 2.27.3.2.2(b) – Phase 1: Automatic recall from machine room signal to designated recall level • *BCBC*/VBBL, Clause 3.2.4.11.(1)(g) – If a fire alarm system is installed, smoke detectors are required in elevator machine rooms • *BCBC*/VBBL, Sentence 3.2.4.11.(4) – Smoke detectors required in 3.2.4.11.(1)(g) (i.e., elevator machine rooms) will recall the elevators upon actuation	✓	✓	✓			✓		✓	• Provide firefighters' emergency operation automatic recall from each detector in the elevator machine room. • The elevators must recall to the designated recall level or alternate recall level, depending on the location of the machine room.
47	• CSA B44-16, section 2.27.3.2.2(c) – Phase 1: Automatic recall from elevator hoistway room signal to designated recall level • *BCBC*/VBBL, Clause 3.2.4.10.(2)(e) – If a fire alarm system is required in a non-sprinklered building, fire detectors shall be installed in elevator hoistways • *BCBC*/VBBL, Sentence 3.2.4.10.(4) – Fire detector required in a non-sprinklered elevator hoistway	✓	✓	✓			✓		✓	• Provide firefighters' emergency operation automatic recall from each detector in the elevator hoistway. • The elevators must recall to the designated recall level or alternate recall level depending on the location of the detector.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	ELECTRICAL ENGINEERING (continued)									
48	• *BCBC*/VBBL, Sentence 3.2.6.4.(3) • CSA B44-16, section 2.27.3.3 – In-car firefighters' emergency operation switches	✓	✓	✓			✓			• For in-car emergency switches, refer to Phase 2 in-car emergency operation. • Provide in-car emergency service switches in all cars, regardless of building height.
49	• *BCBC*/VBBL, Division B, Article 3.2.6.5. and Sentence 3.2.7.9.(1) • CSA B44-16, section 2.27.2 – Emergency power	✓					✓		✓	• Adequate amount of power. • Signal to indicate that the normal power supply has failed, and the emergency or standby power is in effect.
50	• *BCBC*/VBBL, Article 3.2.7.10. – Emergency power wiring and services	✓					✓			
51	• *BCBC*/VBBL, Division B Clause 3.2.7.9.(1)(a) – Emergency power by an emergency generator for all elevators serving storeys above the first storey in a building that measures more than 18 m (in VBBL only) or 36 m above grade, and firefighters' elevators	✓					✓			• Here, a building is defined as a high building in the *BCBC* or the VBBL. • See also Item 44 of this table.
52	• *BCBC*, Division B, Sentence 3.2.6.5.(6) – Firefighters' elevator – electrical conductors	✓					✓			
53	• *BCBC*/VBBL, Division B, Article 3.2.6.7. and Article 3.2.7.10. – Protection of emergency conductors for firefighters' elevator	✓					✓			• For high buildings.
54	• *BCBC*/VBBL, Division B, Article 3.2.7.1. • CSA B44-16, section 2.11.10.2 – Illumination at landing sills	✓	✓	✓			✓			• Note that there is a discrepancy[c] between the *BCBC*/VBBL and the CSA B44-16 requirements in the sections cited.
55	• CSA B44-16, section 2.8.2.2 – No wiring (including E-comm) or junction boxes through or in elevator machinery room and elevator hoistway	✓	✓	✓			✓			• Unless directly related to the elevator.

Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction (continued)

ITEM	DISCIPLINE, REFERENCE, AND DESCRIPTION [a]	RESPONSIBLE PROFESSIONAL [b]								REMARKS
		ARCH	EDCE	EDE	SE	ME	EE	FSE	CRP	
	FIRE SUPPRESSION ENGINEERING									
56	• *BCBC*/VBBL, Division B, Sentence 3.2.5.12.(9) • CSA B44-16, section 2.8.3.3 – Sprinklers in elevator machine rooms and elevator hoistways	✓						✓		
	GENERAL ELEVATING DEVICE ENGINEERING									
57	• *BCBC*/VBBL, Division B, Article 3.1.5.22. • CSA B44-16, section 2.8.2 – Combustible travelling cables for elevators		✓	✓						• Permitted in a building that is required to be non-combustible.
58	• *BCBC*/VBBL, Division B, Clause 3.2.6.5.(3)(a) – Firefighters' elevator – closure and interlock mechanism	✓	✓							• Refer to items 5 and 60.
59	• *British Columbia Fire Code*, Article 2.8.2.4. – The fire safety plan for high buildings is required to include the procedures for use of elevators	✓							✓	• The Coordinating Registered Professional should advise the owner of the requirements.
60	• *British Columbia Fire Code*, Article 2.8.2.7. – Fire safety sign required at each elevator entrance indicating that the elevator is not for use in case of fire	✓								
61	• *BCBC*/VBBL, Division B, Article 3.2.9.1. • *BC Fire Code*, Article 6.8.1.1 • CAN/ULC-S1001								✓	• Requirement for all buildings with fire alarm integration with other systems.

NOTES:

[a] Titles of the following codes and standards were abbreviated in this table. Full references are available in Section 6.3 Codes and Standards:
BCBC = British Columbia Building Code
CAN/ULC-S1001 = CAN/ULC-S1001 Integrated Systems Testing of Fire Protection and Life Safety Systems
CSA B44-16 = ASME A17.1-2016/CSA B44-16 *Safety Code for Elevators and Escalators*
CSA B355 = CAN/CSA-B355 Lifts for Persons with Physical Disabilities
CSA B651 = CSA B651 Accessible Design for the Built Environment
TSBC Directive No. D-L2 060309 2 = Technical Safety BC Directive: Buried Hydraulic Systems (Reference number: D-L2 060309 2)
TSBC Directive No. D-L4 110303 1 = Technical Safety BC Directive: Ventilation of Hydraulic Machine Rooms for Lifts for Persons with Physical Disabilities (Reference number: D-L4 110303 1)

VBBL = Vancouver Building By-law

[b] Abbreviations: ARCH = Architect; CRP = Coordinating Registered Professional; EDCE = Elevating Device Contractor Engineer; EDE = Elevating Device Consulting Engineer: EE = Electrical Engineer; FSE = Fire Suppression Engineer; ME = Mechanical Engineer; SE = Structural Engineer

[c] Engineering Professionals should assess and address any discrepancies between the requirements of the *BCBC*/VBBL and CSA B44-16 using their professional judgment or consult with the Authority Having Jurisdiction to identify the appropriate project-specific requirements. All discrepancies and resolutions must be documented as per *Quality Management Guides – Guide to the Standard for Retention of Project Documentation* (Engineers and Geoscientists BC 2023d)

APPENDIX B: ELEVATING DEVICE ASSURANCE STATEMENT

ELEVATING DEVICE ASSURANCE STATEMENT

1. This letter is endorsed by the Architectural Institute of BC (AIBC), Engineers and Geoscientists BC, and Technical Safety BC.
2. This statement is to be read and completed in conjunction with the AIBC and Engineers and Geoscientists BC *Joint Professional Practice Guidelines – Professional Responsibilities for the Design and Installation of Elevating Devices in New Buildings* (Version 3.0) (hereinafter referred to as "these guidelines").

[Print clearly and legibly]

TO: Technical Safety BC DATE: _____

RE: Elevator Compliance – Mechanical

FOR:

_____
Name of Project

_____
Elevator Identification Number

_____
Address of Project

_____
Address of Project (continued)

The purpose of this assurance statement is to confirm that the elevator pit drainage and machine room/space ventilation for the above-mentioned project has been designed in accordance with the requirements of Technical Safety BC, the *Elevating Devices Safety Regulation* of the *Safety Standards Act*, the *BC Plumbing Code*, and the ASME A17.1-2016/ CSA B44-16 *Safety Code for Elevators and Escalators* (hereinafter referred to as "CSA B44-16"). Furthermore, the undersigned hereby confirms that the installations have been reviewed on-site for substantial conformance to the design.

As per CSA B44-16, the *BC Plumbing Code*, and the *Elevating Devices Safety Regulation*, I confirm that the following requirements have been met:

[Check that the following items have been addressed:]

- ☐ Per CSA B44-16, section 2.2.2.4, the drainage systems have been installed with positive means to prevent water, gases, and odors from entering back into the hoistway from the building drainage systems and to comply with the following:
  - ☐ Per the *BC Plumbing Code*, Article 2.4.3.6., the drainage systems have been connected directly to a sump located outside the elevator pit.
  - ☐ Per the *BC Plumbing Code*, Article 2.4.3.6., the drainpipes that connect the sumps to the drainage systems have a backwater valve.
  - ☐ Per the *BC Plumbing Code*, Article 2.4.4.3., where the discharge from a fixture may contain oil or gasoline, an oil interceptor has been installed.
- ☐ Per CSA B44-16, section 2.2.2.5, the drainage systems have been designed to allow for 11.4 m^3/hour (3,000 gallons/hour) removal rate of water per elevator.
- ☐ Per CSA B44-16, section 2.7.9.2, the machinery space for each elevator has been provided with natural or mechanical means installed to maintain the space temperature between _____ and _____ degrees Celsius, and the humidity levels at _____, as per the manufacturer's specifications.

ELEVATING DEVICE ASSURANCE STATEMENT

☐ Per the *Elevating Devices Safety Regulation* (Part 7, Section 42), if a hydraulic elevator machine room is used for the above-mentioned project, it has been permanently vented, directly or indirectly, to the building exterior.

I certify that I am an Engineering Professional as defined in these guidelines.

Engineering Professional's Name (print)

Address

Phone Number

Email

(Professional's Seal and Signature)

Date

If the Engineering Professional is a member of a firm, complete the following.

I am a member of the firm _____
(Name of firm)

with the Permit to Practice number: _____
(Permit to Practice number)

and I sign this letter on behalf of the firm.

APPENDIX C: ARCHITECTURAL RESPONSIBILITIES RELATED TO ELEVATING DEVICES IN NEW BUILDINGS

In addition to the responsibilities outlined in Appendix A, Table A - 1: Elevating Device Professional Responsibility Matrix for New Construction, the Architect is responsible for providing other services related to the design and installation of Elevating Devices in new buildings.

The Architect's responsibilities include, but are not limited to the following:

- Elevating Device general arrangement:
  - Determine the type of Elevating Device
  - Determine the number, size, and configuration of Elevating Device(s)
  - Determine firefighter emergency operation requirements
  - Determine firefighter elevator vestibule and corridor requirements
  - Determine vestibule requirements for an elevator opening into a storage garage
  - Determine elevator hoistway requirements for interconnected floor space
  - Determine elevator requirements when an elevator opens to exit into a lobby
  - Determine requirements for security and access control
  - Determine requirements for access for persons with disabilities
  - Determine requirements for elevator stretcher accommodation
  - Determine requirements for noise separation in residential buildings
  - Determine fire safety signage at each elevator entrance
  - Determine accessories and fixtures
- Elevating Device machine room:
  - Determine the location and size of Elevating Device machine rooms
  - Determine the space requirements for Elevating Device controller closets
  - Determine space requirements and locations for controls
  - Determine fire separations between machinery spaces, machine rooms, control spaces, and control rooms, and the building
  - Determine access requirements for machine rooms and control spaces
- Elevator hoistway:
  - Determine the location and size of the elevator hoistway
  - Determine fire separation requirements for elevator hoistway walls
  - Coordinate with the structural engineer for the structural design of the elevator hoistway walls
  - Coordinate with the Mechanical Engineer for the design the HVAC systems for the elevator hoistway
  - Determine requirements for glass in the elevator hoistway
  - Determine requirements for emergency doors in blind elevator hoistways
- Elevator exit, including recall levels and exit signs

- Elevator pit design:
  - Show the location of the concrete slab opening, pit walls and slab, pit light, and pit access ladder on the floor plan
  - Coordinate the thickness of the walls and slabs, and the structural attachment of the pit ladder with the structural engineer
  - Show the location of drainage and slope of the concrete slab on the floor plan
  - Coordinate the pit light specified by the Electrical Engineer
  - Coordinate the pit drainage specified by the Mechanical Engineer
- Elevator overhead clearance:
  - Show the hoist beam in relation to the top floor finish level on the elevator section
  - Determine the minimum requirement of overhead clearance for the elevator cab
- Structural alignment of the Elevating Device:
  - Determine if fire protection will be required for steel members
  - Align the base building structure with the elevator equipment structure
  - Coordinate alignment with the structural engineer
  - Coordinate elevator equipment structure with the manufacturer’s standard design
- Elevator cab interior:
  - Determine maximum flame spread rating and smoke developed classification for the cab
  - Determine cab finish materials for floor, ceiling, and walls
  - Show the elevator cab reflected ceiling plan
  - Determine the elevator cab ceiling fan
  - Determine the elevator cab lighting
  - Coordinate lighting and fan electrical requirements with the Electrical Engineer
  - Coordinate ventilation, heating, and cooling requirements with the Mechanical Engineer
  - Determine requirements for glass walls exposed to sunlight
- Elevator door:
  - Determine requirements for an elevator door opening to outside
  - Coordinate the cab door opening with the elevator hoistway wall opening
  - Determine door locations for each floor level (front opening, rear opening)
  - Determine door configuration and orientation
  - Determine side opening(s)
- Operation of the Elevating Device
  - Advise the owner that the fire safety plan for high buildings is required to include elevator procedures