ASTTBC Professional Practice Guideline – Mechanical Technology Services for Building Projects

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Preamble

Professional Practice Guideline: Mechanical Technology Services for Building Projects aims to define the competencies and scope of practice for ASTTBC registrants. ASTTBC acknowledges and reminds its registrants and others that while ASTTBC registrants may be fully competent to provide services, the regulatory frameworks such as the BC Building Code and the Vancouver Building Bylaw may not fully recognize ASTTBC registrants' competencies. ASTTBC has managed to achieve for its registrants many areas of Qualified Professional recognition and will be seeking QP recognition for the areas of practice defined in this Guideline. This guideline will be updated when the regulatory framework is amended to provide further recognition of ASTTBC members as Qualified Professionals (QP).

Registrants are required to comply with the Professional Governance Act, its regulations, ASTTBC Bylaws, including ASTTBC's Standards of Competence, any Guideline to Professional Practice approved by the Board, applicable codes and standards of practice, BC Building Code and the Vancouver or other applicable local Building Bylaw as well as other applicable municipal, provincial, and federal legislation relating to the practice of mechanical engineering technology for building projects.

Specifically, all registrants are required to understand and adhere to the following ASTTBC guidelines:

- Continuing Professional Development
- Professional Practice & Conduct, and
- Professional Seal

1.0 DEFINITIONS

Term	Definition
Registrant	a person who is granted admission, enrolment, or reinstatement in a class of registrants within a category of registration with ASTTBC.
AScT	a person who is certified and registered as an Applied Science Technologist with ASTTBC.
CTech	a person who is registered as a Certified Technician with ASTTBC.
Direct Supervision	(as defined in Bylaws of Engineers and Geoscientists BC) means the responsibility for the control and conduct of the activities, work, or decisions related to the Regulated Practice that have been delegated to a Subordinate.
Registered Professional	(as defined in the BC Building Code) means a person who is registered or licensed to practice as an architect under the Architects Act or a person who is registered or licensed to practice as a professional engineer under the Professional Governance Act. A similar definition is provided in the National Building Code and the City of Vancouver Building Bylaw.

2.0 PURPOSE

The Professional Practice Guideline for *Mechanical Technology Services for Building Projects* has been adopted to support ASTTBC registrants in understanding the service areas and taking professional responsibility within their field. This Guideline also aims to provide a definition of the scope of practice and legal limitations. While not exhaustive, the Guideline provides a context for the type of technical functions, which a registrant may be qualified to carry out. The carrying out of additional professional services is permitted under this Guideline provided the services are consistent with the requirements of each project and this Guideline.

This Guideline recognizes that ASTTBC registrants have attained, by a combination of education, training, and experience, competencies that enable them to apply known engineering technology principles and techniques to the solution of practical engineering technology problems of varying complexity within the ASTTBC definition of scope of practice, this Guideline, and other applicable laws.

It is important to note that Letters of Assurance assigning professional responsibility and accountability for mechanical design and field review services for buildings covered under the BC Building Code and the City of Vancouver Building Bylaw can only be signed and sealed by a Registered Professional as defined in the BC Building Code, the National Building Code, and the City of Vancouver Building Bylaw.

A registrant generally works within a team of professionals, which may include technologists, technicians, engineers, building officials, architects, or other technical and administrative staff. The role of the registrant will vary depending on the size and complexity of the facilities being designed in the project. There is no restriction on who may 'manage' professional services, with the understanding that the appropriate registered professionals are involved in carrying out the work.

A registrant may be the team leader of a project, which is more complex than the scope of practice contemplated by this Guideline when responsibility is assumed by an appropriately qualified and registered professional.

A registrant must be able to recognize any unique characteristics, which, due to their complexity or other issues, are beyond their field of expertise and require the involvement of another qualified professional, whether a registrant of ASTTBC or another professional regulator. Consideration of such matters is especially critical when the risk to the public is increased by factors related to the type and size of the project and the degree of impact on public health, safety, and the environment.

3.0 AREA OF PROFESSIONAL PRACTICE

A registrant may provide professional services for the mechanical design and field review of buildings that is carried out within the terms of this Guideline. The American Society of Heating and Refrigeration Engineers (ASHRAE) Standards, Sheet Metal & Air Conditioning Contractors' National Association (SMACNA), American Society of Plumbing Engineers (ASPE) Handbooks, National Fire Protection Association (NFPA) Standards, and the BC Building Code are examples of a range of codes and standards related to

mechanical services for building projects that can be used as resources in the carrying out of such services.

A registrant may carry out and take professional responsibility for their services in one or more of the activities listed below:

- project fee proposals
- preparation, evaluation, and adjudication of tenders
- project field review, supervision, and contract administration
- management of a project, or aspects of a project
- preparation of specification
- quality management
- planning and scheduling
- teaching and mentoring
- quality management
- coordination with Authority having Jurisdictions, as required.
- operations and maintenance

A registrant shall take note of practice restrictions incorporated in other professional legislation and govern themselves accordingly.

4.0 MECHANICAL TECHNOLOGY SERVICES

This Guideline recognizes the services that ASTTBC registrants have traditionally carried out in the provision of mechanical design and field review services for building projects. Under the authority of the Professional Governance Act, ASTTBC Bylaws, and this Guideline, a registrant may carry out one or more of the services itemized under section 3.0.

A registrant can apply judgment in the selection of the applicable code or standard to be used.
The application of an appropriate code or standard to one component of a service does not permit the completion of other components if there are no appropriate codes or standards in place that can be referenced.

Depending on the size and complexity of the facilities being designed, the registrant may be called upon as the designer of a particular technical function as in those listed in Section “Area of Professional Practice” or might alternately work as a member of a team.

The registrant is advised to identify, in their design, the code and/or standard used in carrying out the relevant service(s). When working under the supervision of a Professional Engineer or Engineering Licensee, the registrant must identify the code and/or standard so that the supervising professional can determine its applicability.

This Guideline does not deal with mechanical technology design services outside of those required as part of the mechanical services for a building.

Following is a description of specific technical functions a registrant may carry out as part of the overall mechanical design of a building.

- Design of heating, ventilation, and air conditioning systems

- Design of plumbing systems
- Design of building mechanical systems controls.
- Design of low-pressure steam distribution systems
- Design of oil, natural, and propane gas systems
- Design of non-medical compressed air and vacuum systems
- Design of fire protection/suppression systems in accordance with prescriptive standards such as NFPA standards reference in the BC Building Code, e.g., NFPA-13, NFPA 13D, 13R and 14. Designers shall refer to ASTTBC's Professional Practice Guideline: Fire Protection Engineering Technology Services for Building Services.
- Field reviews to determine whether constructed works comply with the prescriptive code or standard of the particular technical function carried out and the design intent.
- Project and construction management
- System balancing
- Systems commissioning
- Measurement and testing
- Quality Control and Assurance
- Quality Management principles
- Assessment and auditing of existing systems
- Maintenance programming and planning
- Energy modeling in conjunction with the Envelope Consultant, Architect, etc., and by applicable energy standards and codes such as ASHRAE 90.1 and National Energy Code Standards.

5.0 CONTINUING PROFESSIONAL DEVELOPMENT

Registrants must ensure that they are continuously updating and advancing their knowledge, skills, and competence through continued education and professional development studies. Continuing education requirements include, but are not limited to, training, workshops, certifications, and other requirements to support professional development in areas of practice, ethics, and competence. It is mandatory for a practising registrant to complete CPD requirements as detailed in ASTTBC Bylaws, Part VI, Schedule E, and Continuing Professional Development Guideline.

6.0 PROFESSIONAL SEAL

In accordance with *Section 84* of *ASTTBC Bylaws*, a temporary and practising registrant in good standing may affix their professional seal, with signature and date, to all designs and reports in a manner consistent with the current ASTTBC Professional Seal Guideline. Where such work is a part of a total service or product, the registrant will qualify the application of the seal concerning which portions of the work have been undertaken without supervision.

Where a registrant has completed work under the direct supervision of a registered professional, the registrant may affix their seal only for those aspects of the work completed by the registrant. The supervising professional will affix their seal noting their role as the professional providing the direct supervision.

7.0 PROFESSIONAL LIABILITY

ASTTBC registrants are required to hold paramount the safety, health, and welfare of the public, the protection of the environment, and the promotion of health and safety within the workplace. It is the responsibility of the ASTTBC registrant to ensure that adequate professional liability (E&O) insurance is in place. In accordance with section 86 of ASTTBC Bylaws, registrants must carry and maintain professional liability insurance either through the employer or a third-party organization. In keeping with section 86.1 of ASTTBC's bylaws, registrants must provide written notification to their clients of the status of their professional liability insurance and confirm whether it covers the services to be provided. Registrants must also request the client to provide a written acknowledgment of receipt of the written notification.

8.0 PROFESSIONAL GOVERNANCE ACT AND ASTTBC BYLAWS

In February 2021, the *Applied Science Technologists and Technicians Act* was repealed and ASTTBC was continued as a regulatory body under the Professional Governance Act (PGA). As a regulatory body under the PGA, ASTTBC has the duty to serve and protect the public interest concerning the conduct of its registrants to exercise its powers and discharge its responsibilities in the public interest. ASTTBC is subject to the oversight of the Office of the Superintendent of Professional Governance (OSPG), which operates under the Ministry of Attorney General.

ASTTBC's bylaws create various categories of registration, including practising and trainee, as well as requirements for maintaining registration with ASTTBC in good standing. ASTTBC is responsible for ensuring that registrants conduct themselves in a professional, competent, and ethical manner in the provision of services to the public. This includes creating and disseminating practice guidelines, standards of competence, and a Code of Ethics to ASTTBC registrants with which registrants must comply. This practice guideline should be read in conjunction with section 85 and Schedule D of ASTTBC's bylaws.

In accordance with the PGA and the ASTT Regulation, registrants of ASTTBC are permitted to engage in the regulated practice of applied science technology and are granted exclusive use of reserved titles. In accordance with the ASTT Regulation, registrants of ASTTBC have exclusive use of the titles of Applied Science Technologist (AScT), Applied Science Technologist Trainee, Certified Technician (CTech), Certified Technician Trainee, and Registered Technical Specialist (RTS).

9.0 LIMITATIONS

Every effort has been made to ensure the accuracy and completeness of this Guideline. Any error or omission does not relieve a registrant from making decisions and assuming professional responsibility appropriate to the circumstances.

REFERENCES

The following documents are suggested as reference material:

1. Professional Governance Act
2. ASTTBC Bylaws
3. APEGBC's Guidelines for Mechanical Engineering Services for Building Projects
4. Codes and Standards appropriate to the circumstances, e.g., BC Building Code and Vancouver or other applicable local Building Bylaws
5. EGBC's Guidelines for Mechanical Engineering Services for Building Projects
6. ASTTBC's Guidelines for Fire Protection Engineering Technology Services for Building Projects
7. ASTTBC Continuing Professional Development Guideline
8. ASTTBC Professional Practice & Conduct Guideline
9. ASTTBC Professional Seal Guideline
10. Other ASTTBC Guides to Professional Practice in related practice areas

REVISION HISTORY

- Approved by ASTTBC Council September 27, 2007
- Revised May 22, 2008, to include reference to the Engineers & Geoscientists Act
- November 10, 2015, Draft Revisions (Joint Board – preliminary, info only)
- March 10, 2017, Draft # 1 - Revisions from SME Consultations.
- April 11, 2017 – Final SME Approved Draft for ASTTBC Council Approval
- April 11, 2017 – Approved by ASTTBC Council
- August 2021- Revised upon review by SME Group, no major changes suggested
- September 30, 2021- Approved by ASTTBC Council
- Revised October 2023, to incorporate updates to ASTTBC Guidelines and bylaws.