

# How the evolution of steel building systems has created gaps for commercial and professional liability

**PAUL RANSOM, P.ENG.** – Special to The GTA Construction Report



The pre-engineered metal building (PEMB) industry has seen many changes since the late 1980s. Formerly, the industry sold product through networks of regional general contractors. Today, the market has transitioned to multiple sales channels including:

- direct sales
- sales brokers
- private label sellers
- regional general contractors
- national project managers.

This has brought efficiencies to the supply chain but has also opened gaps for commercial and professional liability. Regulatory changes and lessons learned are driving a new vision in the project delivery model.

Manufacturers invest considerable

capital in training regional dealers on features, applications and limitations of the product for design-build efficiency. As supply channels become more diverse, this level of training becomes less concentrated. When a manufacturer sells direct, outside of a trained dealer network, they rely on the buyer to be knowledgeable in the product at the back-end and the requirements of the owner, building authority and prime consultant at the front-end.

Computer technology has also changed the industry. Formerly, pre-engineered buildings were selected from tables of dimension and load options. Without this pre-engineered approach, weeks would be added to a simple “shade and shelter” building project schedule. Now, every

building can be custom designed to larger sizes and higher complexity with minimal schedule effects.

The system building approach efficiently reduces consultant effort, price and schedules but also reduces the opportunity for conformance verification. To assist owners and building authorities, the CSA A660 “Certification of Manufacturers of Steel Building Systems” (SBS) was developed as an independent third-party qualification of the manufacturer. The requirement for manufacturer certification has been given legal effect in the national and provincial building codes.

Manufacturers sell an engineered product but do not supply engineering services to a project; they design and manufacture components and assemblies to portions of building code Part 4 Structural Design. Layers of building design for code compliance, integration and safety remain in the prime consultant’s domain. The manufacturer’s obligation is limited to their order contract, not necessarily the scope of the building supplier to the prime contract.

Professional Engineers Ontario (PEO), among others, has published a professional practice guide for the use of manufacturer-designed products. The roles from prime consultant to manufacturer’s engineer are defined for separation of responsibility. CSSBI provides further clarification from the industry perspective. It is also incumbent on the building authority to ensure continuity of professional commitment. Some of the most common and long-

standing issues affecting consultants and SBS manufacturers are:

- proprietary details
- timely building reactions for foundation design
- tapered structural and cold formed components
- incomplete design criteria for manufacturer’s design
- production schedule changes for seemingly minor revisions
- commercial responsibility and professional oversight continuity

A new team member, a steel building system consultant, is recommended for continuity of professional responsibility and to identify commercial opportunities – from specification to bid evaluation to site review and more. The SBS consultant complements the work of architectural, structural and foundation consultants with experience in steel building design, building codes and life safety for optimum performance and profitability

*Paul Ransom, P.Eng. has been actively involved in the steel building industry for over 25 years, a member of CSA 660 committee and the founder of Steel Building Experts – specialists in providing innovative services to maximize the quality, sustainability and safety of metal building projects. For more information go to [www.steelbuildingexperts.ca](http://www.steelbuildingexperts.ca) or call (905) 617-2729.*

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