

COMPILED BY BRUCE MATTHEWS, P.ENG.

This matter came on for hearing before a panel of the Discipline Committee on December 8-10, 2003, at the offices of the Association of Professional Engineers of Ontario (the "association"). The association was represented by Michael Royce of Lenczner Slaght Royce Smith Griffin. Michael A. Schor, P.Eng., and M.A. Steelcon Engineering Limited were not represented by legal counsel.

The Allegations

The allegations against Michael A. Schor, P.Eng., ("Schor") and M.A. Steelcon Limited ("Steelcon") were set out in the Notice of Hearing. Appendix A to the Notice of Hearing, which was an exhibit to the hearing, is summarized as follows:

1. Schor and Steelcon were retained on or about April 2002 by Larry Vann ("owner") to provide structural engineering services for a proposed aviary building to be located in Niagara Falls, Ontario. The project involved the construction of a new structural steel-framed building, approximately 100 feet by 120 feet in plan, and 60 feet in height. The new building was immediately south of an existing four-storey, reinforced concrete-framed building, which was constructed at the turn of the century and was most recently used as a museum. The new and existing buildings were to be interconnected by door openings to form the Niagara Falls Aviary facility.
2. In May 2002, the City of Niagara Falls Building Department (the "city") received structural drawings for permit application for the proposed aviary prepared by Steelcon, and bearing the seal and signature of Schor. On June 10, 2002, the city issued a plan examination report in conjunction with a building permit issued for construction of the foundations of the new building only.

Decision and Reasons

In the matter of a discipline hearing under the *Professional Engineers Act* and in the matter of a complaint regarding the conduct of:

Michael A. Schor, P.Eng.

a member of the Association of Professional Engineers of Ontario and

M.A. Steelcon Engineering Limited

a holder of a Certificate of Authorization.

Based on the structural drawings submitted, the city drew Schor's attention to specific requirements of the *Ontario Building Code* with respect to live loads, wind and earthquake loads, building deflections, and existing foundations.

3. By letter to the city on May 27, 2002, Schor provided information on the loading parameters that he used to calculate the resistance of the existing building to meet the 1995 *National Building Code*. Schor concluded in his letter that the existing building was safe and sound for its new purpose as part of the proposed aviary. Schor also indicated in his letter that he had checked the reinforcing steel in the columns, beams, and slabs in different locations, and compared the results with the required reinforcing steel, and found that the existing reinforcing steel exceeded the required reinforcing steel.
4. In July 2002, the city received a revised set of nine structural drawings for the Niagara Falls Aviary, prepared by Steelcon and bearing the seal and signature of Schor. On the same day, the city also received six structural steel drawings prepared by

Bradshaw Iron Works ("Bradshaw"), and 25 architectural drawings prepared by Victor Tarnoy Architect. The Bradshaw shop drawings, which showed structural connection details not shown elsewhere on the structural drawings, were not sealed by a professional engineer licensed in Ontario, as required by the city.

5. By letter dated July 23, 2002 to the city, Schor responded to the city's plan examination report dated June 10, 2002, with comments that included:
 - (a) the new steel building and the existing concrete building had been checked to safely resist all loads;
 - (b) the new steel building was designed to withstand wind and earthquake loads per seismic zone 2;
 - (c) the existing concrete building had been checked for lateral loads in wind and earthquake for seismic zone 2;
 - (d) the different behaviour of the new steel building and the existing concrete building during application of lateral loads was considered, and beams connecting the two buildings were designed to be pinned on the side of the new steel building and sliding on the side of the existing concrete building;

- (e) the existing masonry wall and the existing concrete beams supporting new steel beams were checked and found to be safe and adequate; and
- (f) the existing footing of the concrete building was checked and found to be safe and adequate to carry the new loads.
6. The city issued a plan examination report dated August 1, 2002, in conjunction with a building permit issued only for construction of the structural shell of the new building. Based on the structural drawings submitted, the city indicated the structural shell permit was issued on the basis of Schor and Steelcon having reviewed all items as listed in the city's plan examination report dated June 10, 2002.
7. It is alleged that Schor and Steelcon provided sealed structural design drawings for permit application with inadequate and inconsistent descriptions and detailing of the existing building, and with incomplete details of the connections to the existing building.
8. It is further alleged that Schor and Steelcon provided sealed structural design drawings for permit application that indicated a building where the lateral load resistance was structurally deficient and with inadequate or incomplete drawing notes and material specifications.
9. It is alleged that, as the responsible engineer for the project, Schor and Steelcon failed to seal drawings of connections for structural steel members, or request such drawings be sealed by another professional engineer as required by the city.
10. It is alleged that Schor and Steelcon failed to maintain the standards that a reasonable and prudent practitioner would maintain in carrying out a structural steel design for a building and, in so doing, acted in a disgraceful, dishonourable and unprofessional manner.
11. By reason of the foregoing, it is alleged that Schor is guilty of incompetence as defined in section 28(3)(a), and Schor and Steelcon are guilty of professional misconduct as defined in section 28(2)(b) of the *Professional Engineers Act*, R.S.O. 1990, Chapter P.28.
12. "Incompetence" is defined in section 28(3)(a) as:
"The member or holder has displayed in his or her professional responsibilities a lack of knowledge, skill or judgment or disregard for the welfare of the public of a nature or to an extent that demonstrates the member or holder is unfit to carry out the responsibilities of a professional engineer."
13. The sections of Regulation 941 made under the said Act and relevant to this misconduct are:
- (a) *Section 72(2)(a)*: negligence as defined at section 72(1): In this section "negligence" means an act or an omission in the carrying out of the work of a practitioner that constitutes a failure to maintain the standards that a reasonable and prudent practitioner would maintain in the circumstances;
- (b) *Section 72(2)(b)*: failure to make reasonable provision for the safeguarding of life, health or property of a person who may be affected by the work for which the practitioner is responsible;
- (c) *Section 72(2)(d)*: failure to make reasonable provision for complying with applicable statutes, regulations, standards, codes, by-laws and rules in connection with work being undertaken by or under the responsibility of a practitioner;
- (d) *Section 72(2)(g)*: breach of the Act or regulations, other than an action that is solely a breach of the code of ethics;
- (e) *Section 72(2)(h)*: undertaking work the practitioner is not competent to

perform by virtue of the practitioner's training and experience;

- (f) *Section 72(2)(j)*: conduct or an act relevant to the practice of professional engineering that, having regard to all the circumstances, would reasonably be regarded by the engineering profession as disgraceful, dishonourable or unprofessional.

Plea of the Member and Holder of a Certificate of Authorization

Schor and Steelcon denied the allegations as set out in the Notice of Hearing.

Overview

This hearing arose as a result of the involvement of Schor and Steelcon in a project in Niagara Falls, Ontario. On or about April 27, 2002, Steelcon was engaged by the owner of the project to provide structural engineering services for a proposed aviary building. This followed the dismissal of another engineer who worked on the same project prior to Steelcon. Although the contractual relationship was with the owner, Schor also worked closely with Victor Tarnoy, OAA, the project architect.

The project team was under significant time pressure to deliver the project while dealing on an ongoing basis with many revisions to the scope of work. Part of Steelcon's responsibilities was to submit structural drawings to the municipal building department in support of building permit applications.

On May 23, 2002, it is alleged that Steelcon sealed eight structural drawings for the purpose of submittal to the building division of the City of Niagara Falls. It is alleged that the purpose of the submittal of the drawings was to obtain the building permit for the project.

The city's examination report dated June 10, 2002 provided conditional building permit approval for foundations only. The letter pointed out several requirements of the *Ontario Building Code* regarding loads, deflections and foundations. The letter also referred to the requirements of the subsequent permit applications, including the submittal of shop drawings of the structural system, signed and sealed by a professional engineer.

The city received a letter from Schor, dated May 27, 2002, and marked as received by the city on July 11, 2002, in which Schor outlined the parameters used to evaluate the existing wall. In that letter, Schor stated the existing building was safe and sound for its proposed new purpose as part of the aviary. He further stated that he had checked the reinforcing steel in the columns, beams and slabs in different locations, and compared the results with the required reinforcing steel, and found that the existing reinforcing steel exceeded the required reinforcing steel.

A set of revised Steelcon drawings, sealed and signed by Schor, was received by the city on July 11, 2002. On that same day, a set of six shop drawings from the structural steel supplier, Bradshaw, was also submitted to the city. The Bradshaw drawings showed connections and other structural details not shown elsewhere on the structural drawings by Steelcon, and were not sealed by a professional engineer, as required by the city.

Steelcon provided another letter to the city dated July 23, 2002, referring to the plan examination report of June 10, 2002, and responding to five structural issues raised by the city in the June 10 correspondence. A conditional permit for the structural shell of the proposed aviary project was issued by the city on August 1, 2002. This letter acknowledged the June 23, 2002 letter signed by Schor, and again stipulated the requirement for shop drawings, sealed by a professional engineer, for the structural steel system.

It was a requirement of the city that engineering drawings for permit application be sealed by the professional engineer who was responsible for the engineering contained in the drawings. The city felt that it should be able to reasonably rely upon the seal and signature of the professional engineer to confirm that the drawings were complete and had been prepared in accordance with applicable codes and the municipality's requirements. Applicants for building permits should not be relying upon the municipality's drawing review process to identify deficiencies in their submissions.

The position of the member was that it was standard practice in the building

industry to provide stamped drawings for initial permit applications even though the drawings may not be complete in all respects. Missing or incorrect information would be furnished or revised in later submissions as the project evolved.

The Evidence

Royce filed copies of relevant drawings and correspondence as exhibits to the hearing. He noted to the panel that the main issue in this matter was the degree to which drawings and other information submitted to a municipality for building permit purposes should reasonably be expected to be complete and accurate. The association's case would deal with the submissions by Schor and Steelcon to the municipality for building permits. The association was not concerned with whether the project ever proceeded or whether the aviary was built.

Royce called William J. Clark, P.Eng., ("Clark") to give evidence as an expert structural engineer. Clark's CV was filed as an exhibit. His experience includes the following:

- ◆ retired from Morrison Hershfield in May 2003 after a career of over 40 years in structural engineering;
- ◆ became principal of Morrison Hershfield in 1978;
- ◆ extensive experience as design engineer and principal-in-charge of projects involving new buildings and building renovations;
- ◆ worked in public-sector and private-sector projects;
- ◆ recent clients on large projects include City of Toronto, Toronto Hydro, TTC, Hibernia Management and Development Co., City of North York.

In response to questions from Royce, Clark provided the following testimony concerning the building permit process:

- ◆ The building permit process in Ontario is established by the *Building*

Code Act, which empowers municipalities to issue permits for buildings to ensure structural adequacy, fire protection and public safety.

- ◆ Building officials rely on the professional engineer's seal to ensure compliance with the *Ontario Building Code*. Structural drawings submitted for building permits should demonstrate to the building authority that major structural aspects of the project are adequate for public safety.
- ◆ The proposed aviary building project in Niagara Falls would require a building permit.

Regarding the Steelcon drawings of May 2002, sealed by Schor, Clark described the following inadequacies of those drawings in dealing with the description and detailing of the existing building:

- ◆ On drawing S-1EX, there was no gridline reference, the size of existing concrete beams and columns was not shown, and there was no caution regarding the severing of existing reinforcement while making the connection.
- ◆ There were inconsistencies in the description of a proposed concrete slab. Sections on S-1EX showed thicknesses of 4", 5" and 101mm for the same slab.
- ◆ There were inconsistencies regarding the description of the existing structure. Section 3 on the drawings calls for drilling and grouting reinforcement into an existing wall, while the plan suggests the existing member is a column.
- ◆ The structural details of the existing wall near gridlines A and B were not consistent with the architectural drawings. The architectural drawings indicated existing windows, while the structural drawings indicated "existing 8" conc. block wall to remain."

- ◆ The details of the existing wall, which is shown cross-hatched on drawings, are not indicated and yet the wall is noted as being load-bearing.

Regarding the detailing of the proposed connections to the existing building, Clark described the following examples of inadequacies on the Steelcon drawings:

- ◆ There were incomplete details of beam pockets in the existing block walls.
- ◆ There were incomplete details of the proposed interconnection between the existing and proposed structures, such as beam bearing plates, grouting details, size of bearing plate, welding or other connection details.
- ◆ There were no details of interconnections between new and existing masonry at the ends of the stairwell walls.
- ◆ There were no support details of the beams connecting the two structures. In the letter of July 23, 2002, Schor stated that the beams would be "...pinned on the side of the new steel building and sliding on the side of the existing concrete building," but no details were provided in the letter or on the drawings.

Regarding the deficiency of lateral load resistance, Clark noted the following omissions and inadequacies in the Steelcon drawings:

- ◆ Some of the beams on the second floor near gridlines A and B were specified with full moment connections, but it was not clear what the moment connections would do and how much lateral resistance, if any, would be provided in the north-south direction.
- ◆ Other than those moment-resisting connections, the proposed structural steel framework had no special provi-

sion for lateral load resistance from wind and earthquake loading. The structural steel fabrication drawings by Bradshaw Iron Works Ltd., stamped as "approved as noted" by Steelcon, but not sealed by an engineer, did not show adequate bracing elements. The details on the Steelcon drawings would not provide sufficient resistance to lateral loads.

- ◆ Despite a proposed roof system with extensive glazing, the structural frame had low stiffness and inadequate lateral load resistance and would sway in the wind if constructed as detailed. Clark characterized the proposed structure as "essentially a five-storey house equivalent for birds to fly and with little internal structure and walkways." If the connection to the existing building was intended to provide lateral resistance, the structural detailing on the drawings was not adequate.
- ◆ There was no adequate system for providing lateral load resistance at the south end of the building.

Regarding the allegation that Schor and Steelcon provided drawings for the permit application with inadequate detail for design-related items, Clark noted the following examples:

- ◆ no top of rock elevations, which implies that the pier heights were not known;
- ◆ the material below the concrete slab on grade was not described;
- ◆ no reinforcement detail for the new escalator pit;
- ◆ no detail of the connection of the floor members to the beams or masonry support wall, and no detail around penetrating columns;
- ◆ no axial forces for design of the connections for the truss with a span of 68'-4";

- ◆ the five areas on drawing S7 with cross-hatching were not defined.

With respect to the allegation that Schor and Steelcon provided sealed structural drawings for permit application with inadequate notes and material specifications, Clark provided the following examples:

- ◆ no reference to a geotechnical report;
- ◆ no specifications for grout or epoxy noted on drawing S1;
- ◆ no specifications for concrete or masonry materials;
- ◆ the note on drawing S-1EX regarding the metal deck, structural note number 8, stated "use 3 spans min.," but often only a single deck was available in this structure.

Clark stated that these deficiencies and inconsistencies did not meet the standard of care that should reasonably be expected from a competent practitioner. This concluded Clark's examination-in-chief by Royce.

Schor began the cross-examination of Clark by reviewing the allegations in para. 12 of the Notice of Hearing regarding the omissions and inadequacies of the Steelcon drawings of May 2002, and stated that the drawings were issued for the purposes of securing a foundation permit. Following other comments and statements by Schor concerning the project and the drawings, Clark responded to questions from Schor as follows:

- ◆ There should be a system in place to review drawings to ensure completeness and to correct typing or drafting errors.
- ◆ The existing building should have been carefully checked before relying on the load-bearing capacity and integrity of existing building elements.
- ◆ Clark would have difficulty assuming that an existing building element could be relied upon structurally, unless there was adequate access to

the existing structure to allow examination. For example, if he could not verify the capacity of the existing building, he would have designed a separate support system for the new corridor rather than relying on an existing structure that could not be inspected and verified prior to design.

- ◆ Where it is not possible to expose or inspect the existing structure, Clark stated that it would be best to clearly state the design assumptions so that those assumptions could be verified later.
- ◆ Sealed structural drawings should reasonably be expected to be complete.
- ◆ Material specifications should be set out to obtain a satisfactory product “or approved equal” as an integral part of the design.
- ◆ Structural steel fabrication drawings should not have been reviewed by Steelcon without an engineer’s seal.

In response to questions from members of the panel, Clark stated as follows:

- ◆ His terms of reference from the association was to review the set of Steelcon drawings and other materials for completeness for building permit application, but not to perform detailed structural calculations.
- ◆ He had previously completed reviews of 50-100 sets of structural drawings on other projects.
- ◆ He did not observe sufficient connection details on the Steelcon drawings, but the drawings were sufficient for a steel fabricator to produce shop drawings.
- ◆ The structure would have failed if construction had proceeded following the Bradshaw fabrication drawings.
- ◆ His initial impression of the drawings was that gravity loads were accom-

modated but that the structure did not have sufficient lateral bracing. This was the most important issue that arose from his review and, in his opinion, is a serious issue affecting the ability of the structure to adequately resist *Ontario Building Code* wind and earthquake loadings.

- ◆ None of the questions asked of Clark during the hearing changed his opinion regarding this matter.

This concluded the evidence on behalf of the association.

The first witness appearing on behalf of Schor and Steelcon was Victor Tarnoy, OAA. In response to questions from Schor, Tarnoy provided the following evidence:

- ◆ Tarnoy, in addition to being the architect for the project, filled the role of “clerk of the works.” He was on the project every day and worked closely with Schor and Steelcon.
- ◆ When Steelcon was retained, rough excavation to bedrock had started, but there was no accurate survey of the rock elevations.
- ◆ Another engineer had been on the project before Steelcon, but the owner had become concerned that the previous engineer had produced drawings of a structure that “were completely laced with bracing.” Steelcon was requested to provide drawings to the municipality to replace the submission by the previous engineer. Immediately after their engagement by the owner, Steelcon was under constant pressure to provide timely submissions to the municipality and to respond to the many demands of the owner, who made significant changes to the project scope of work, virtually on a daily basis.
- ◆ The architectural drawings were not complete until the project was built.
- ◆ Tarnoy and Schor discussed cross-bracing in the walls and sought the com-

mitment of the owner, but changes to the project continued nonetheless.

- ◆ Connection details were not on the drawings, but were supplied by Steelcon prior to construction. Tarnoy said that the project could not wait for the issuing of structural details, and that Steelcon provided exemplary services to the rest of the team on a very demanding project.
- ◆ The City of Niagara Falls required sealed fabrication drawings from steel suppliers. Schor and Tarnoy checked the connections. The design engineer added some reinforcing. Despite the large glass areas in the structure, there have not been any significant problems to date with this building.

In cross-examination by Royce, Tarnoy provided the following information:

- ◆ The building as it now stands includes items not shown on the set of drawings at issue in this hearing. Lateral bracing has been added.
- ◆ The final building permit was issued three weeks before the completion of the building.
- ◆ The final set of drawings showed the additional lateral bracing.

Tarnoy gave the following evidence in response to questions from members of the panel:

- ◆ He had been an architect for roughly 20 years. This was his first involvement with Steelcon or Schor.
- ◆ He did not keep the building department up to date on all revisions to the project. The building department had encouraged the team not to provide details of every single revision, as long as the as-built drawings were complete and accurate. The building division of the municipality was very busy dealing with other large projects at the same time.

- ◆ The Steelcon drawings were what was needed to secure the building permit. By the time of permit issuance, the submitted drawings were out of date and had been replaced by a revised set.
- ◆ At no time did he have any indication of incompetence on the part of Schor or Steelcon. Tarnoy was aware of Schor's excellent reputation in the Niagara Falls area and within the building division.
- ◆ By July 11, connection details had been received from Steelcon, but were not on the set of drawings submitted to the city. Shortly after this date, the city requested that the team not bring in drawings of every revision, but to ensure that the as-built set of drawings was complete.
- ◆ The project team was under appalling time pressure, and was dealing constantly with changes to the project, but everyone did their utmost to ensure public safety.

The next witness called on behalf of Schor and Steelcon was Wally Braun ("Braun"), who testified as follows:

- ◆ He was the owner of Braun Construction Limited and had been in business for 30 years as a construction manager and general contractor. He had been involved in projects ranging in construction value from \$1 million to \$30 million.
- ◆ At the time he was hired by the owner, the existing building had been gutted, rough excavation was completed to bedrock, and architectural, mechanical and electrical drawings were not done. The owner was anxious to get going but was concerned about the performance and progress of the structural engineer. Braun provided the name of Steelcon and another engineer to the owner as a possible replacement, and this led to the hiring of Steelcon by the owner.

- ◆ Schor and Braun inspected the existing building and identified locations where structural elements could be exposed for examination.
- ◆ On other projects, Braun had obtained four or five building permits from the City of Niagara Falls as construction was proceeding.
- ◆ There were discrepancies and omissions on the Steelcon drawings, but Braun had no difficulty clarifying these issues with Schor. He was readily able to price the work based on the Steelcon drawings with Schor's clarifications. He had information from Schor regarding materials to be used.
- ◆ Braun was aware that all structural steel connections were to be full moment resisting connections, which implied to Braun that welded connections would be used. The steel supplier was aware of this and it was clear that shop drawings were to be sealed by a professional engineer.
- ◆ Drawings and shop drawings came to the site office. The project architect was there every day. There was an internal process for checking drawings. Schor never took drawings to the city.

- ◆ Braun recalled being contacted by Schor, who was upset that shop drawings were not sealed by an engineer. Schor met on site with Braun and the engineer from the steel fabricator. Architectural drawings were not available, but Schor requested additional bracing and welding.

During cross-examination by Royce, Braun stated the following:

- ◆ Schor and Braun knew that vertical bracing would be required in the new building long before July 11, 2002.
- ◆ Some existing concrete did not appear to be satisfactory. Schor

specified locations where concrete was to be removed to examine reinforcement.

- ◆ Concrete and masonry materials were normally specified on the cover sheet to the drawings. Braun got clarification from Schor and "would never decide this on our own...."

In response to questions from the members of the panel, Braun commented as follows:

- ◆ In the hands of a less experienced builder, the drawings would have posed a problem. He was able to fill in blanks from his experience and with clarifications from Schor.
- ◆ He could not have started construction with the set of drawings dated May 2002.
- ◆ He had no major problems dealing with Steelcon and Schor on approximately 25 previous projects.
- ◆ Most of the investigation on the existing building was done in May 2002.
- ◆ The geotechnical investigation was done in May and June 2002, following the excavation.
- ◆ An engineer's seal meant that drawings were actually checked by the engineer and not just reviewed by staff.

During follow-up questions by Schor, Braun said that his discussions with Schor helped him to understand the drawings. Another contractor could possibly have made a serious mistake.

Schor then called Warren Bradshaw ("Bradshaw") as a witness and Bradshaw provided the following evidence during his examination-in-chief by Schor:

- ◆ Bradshaw was responsible for the structural steel fabrication for the project. His main contact was the builder, Wally Braun Construction.

- ◆ Braun did not clarify design details with him. He understood the connections from the Steelcon drawings. If there were any questions, Steelcon's office was contacted.
- ◆ Some, but not all, shop drawings were sealed by Bradshaw's engineer.
- ◆ Vertical bracing was added when the structural framing was 50 per cent erected.

Responding to a question from Royce in cross-examination, Bradshaw confirmed that from early on, it was clear that Steelcon regarded some form of vertical bracing as being necessary.

Bradshaw replied to questions from the panel as follows:

- ◆ The design of connections are normally based on handbook details, checked internally by Bradshaw staff.
- ◆ Fabricators seldom have complete drawings at the time of tender. A lot of information must be assumed.
- ◆ All Bradshaw structural designs are stamped by a professional engineer.

Schor then took the stand in his own defence. His evidence is summarized as follows:

- ◆ He completed his undergraduate and postgraduate education in Israel. He immigrated to Canada in 1974. In 1978, he moved from Quebec to Ontario. He started his own company and has practised since 1981.
- ◆ The largest projects he has completed include reinforced concrete structures of 32, 36 and 44 storeys, and in structural steel, a building of 14 storeys.
- ◆ In April 2002, he was engaged by the owner of the aviary project to assess the existing reinforced concrete building. Soon after, his assignment was increased to include the design of the new building.

- ◆ From the outset, he was working under the pressures of a very challenging schedule. The builder was concerned about the possibility of losing a construction season. He started quickly to prepare drawings that were needed for building permit applications.

- ◆ A significant amount of data was not available when he started, including surveys, and architectural details of roofing and glazing. Project details were being changed rapidly and, notwithstanding the submission of drawings for permit, he was relying on later opportunities to make the necessary revisions to the design.

- ◆ The design accounted for wind, earthquake and snow loads. The design analysis included a complete computer modelling of the proposed works.

- ◆ Steelcon informed the construction manager and the steel fabricator that vertical bracing would be required. However, the design concept for the building continued to change, and at the time of drawing submittal, it was not possible to obtain the approval of the owner and the architect to the location of the bracing.

- ◆ He visited the site daily to ensure that he was aware of all changes as they occurred and to accommodate requests from the rest of the project team.

- ◆ Some of the discrepancies and omissions noted in paragraph 12 of the allegations, and reviewed in Clark's evidence, were errors by his draftsman because of the rushed preparation of the drawings. Some details could not be provided because information was not available. For example, he had asked for information to locate areas where beams would connect to the existing building, but in the absence of this information, the only

way he could avoid delaying the project was by visiting the site daily and dealing with revisions to design requirements on an ongoing basis.

- ◆ The city was very flexible about requirements during the permit process, and encouraged the team not to bring drawings of every revision. The building division could not keep up with the changes on the project.

- ◆ The drawings do not paint a correct picture of how committed Schor and Steelcon were to the successful and timely completion of the project.

- ◆ The drawings would have been satisfactory for another contractor who worked closely with Schor in the same way as Braun.

- ◆ The drawings stamped by Schor in May 2002 were not submitted to the city until later because the architectural drawings were not ready.

- ◆ The Steelcon drawings were out of date by the time they were submitted to the city. There were at least three revisions to every drawing in the set during the project.

- ◆ Schor did everything possible to complete the project with no risk to public safety.

- ◆ Schor did not know why steel fabrication shop drawings were submitted to the city without an engineer's seal. Schor designed the truss, but did not show axial forces because of time constraints. Schor met Bradshaw's engineer, Hodson, on site to review forces and connection details. Hodson decided that a few connections needed more bracing.

- ◆ In his long career, Schor's structural engineering designs had never been the cause of a risk to public safety. He made sure that he was involved in every structural engineering decision on this project.

Royce's cross-examination of Schor is summarized as follows:

- ◆ Schor admitted that the drawings of May 2002 were not sufficient for construction and required additional clarification. Drawings for construction would normally have more complete details. However, at the time, Schor did not have enough information to provide all of the missing details.
- ◆ To resist lateral loads and to reduce deflections, the structure required moment resisting connections and more lateral and vertical bracing, not shown on the Steelcon drawings that were stamped by Schor. These added expense to the project, but in Schor's view, were necessary.
- ◆ Royce noted that the drawings do not show or infer that vertical bracing would be required and suggested that the drawings were seriously incomplete. Schor could have alerted readers or reviewers of the drawings that additional bracing was necessary. Schor acknowledged that the drawings were incomplete, but if he had marked the drawings as "preliminary" or "not for construction," the City of Niagara Falls would have rejected the submission of the drawings for the building permit.
- ◆ Schor stated that the structural steel was roughly 50 per cent installed before Schor was able to confirm the details of vertical bracing. The permit for the steel structure was issued on August 1, 2002.
- ◆ Royce referred to the July 23 letter to the city signed by Schor, which states, "The new steel building and the existing concrete building have been checked to safely resist all loads." Royce suggested that Schor was checking a structure that was not depicted on the drawings. Schor agreed and stated that only the architect and the construction manager knew about the bracing. The city did not.
- ◆ Royce requested Schor's comments on the alleged shortcomings and discrepancies on the Steelcon drawings of May 2002. These were set out in the allegations in the Notice of Hearing and were described in the evidence of Clark. Schor reviewed each of the items and offered explanations for each of the items. There were errors and omissions on the drawings by his own staff, caused by the time pressures of the project. Much of the required information was not available at the time of the drawing preparation. Other data were omitted with the intention of revising the design later as architectural concepts evolved.
- ◆ Regarding the fabrication shop drawings, Schor stated that he asked that the drawings be sealed by an engineer, and that he did not know that an unsealed set was submitted to the municipality.
- ◆ Schor stated that he was aware that the building division did not have professional engineers on staff and that the department had been very busy with other major projects. He was aware that the city relied on the seal of professional engineers to ensure the completeness and accuracy of the submittals.

Schor responded to questions from the panel as follows:

- ◆ *Why was the letter of May 23 from the city not answered for six weeks?* The letter was not addressed to Schor, although he did receive a copy. Schor stated that he thought someone else on the team would respond.
- ◆ Time pressure to prepare and submit drawings affected the drawings. Schor stated that the drawings of May 2002 were less than his normal standard.

- ◆ Schor attended to the site every day because there was not sufficient information available from the other disciplines. He dealt with changes each day to ensure that there was no risk to public safety.
- ◆ Schor was the only professional engineer at Steelcon.
- ◆ Any general contractor would know to come to him to clarify the details of grouting base plates or supplying acceptable materials.
- ◆ Steelcon's quality assurance procedure consists of Schor reviewing the draftsman's work, making corrections or adding information as necessary, plotting and signing the drawings. This procedure was probably followed for the drawings of May 2002.
- ◆ With respect to the May 2002 drawings, Schor admitted that he could have said that details would follow, and that better notes and more complete information should have been provided on the drawings. However, he was trying to do his best to meet the schedule imposed on the project by the owner.

Closing Arguments

Royce began his final submissions by saying that Steelcon could not provide drawings marked as "preliminary" or "not for construction," because the city would not accept the drawings marked in this fashion for the purpose of building permit application. However, once sealed and submitted to the municipality, the drawing implies that a professional engineer has certified that the engineering depicted on those drawings is complete and safe for the intended purpose. The drawings of May 2002 create the impression that the structure will work even though extensive details and assumptions are missing and, further, the drawings make no reference to the requirement for bracing of the structure, even though that requirement was known at the time of submittal of the drawing. It is clear that Schor submitted the Steelcon drawings to the architect

knowing that the drawings would be submitted to a municipal building department with no professional engineer on staff. The letter of July 23, 2002 to the city refers to bracing that is not shown on the May 2002 drawings, creating the potential to mislead the building department.

With reference to the allegations in the Notice of Hearing, paragraphs 1-11 of appendix A were admitted. The association was seeking findings under the items listed in appendix A, paragraph 12, except for items 12(a)(iv) and 12(e). The association felt that the information on drawing SO, submitted as an exhibit, did provide explanation for 12(e) and for a portion of 12(f). The association was also seeking findings of incompetence and professional misconduct as set out in the allegations, although the references to sections 72(2)(g) and 72(2)(h) were withdrawn.

In final submissions by Schor, on behalf of Schor and Steelcon, Schor stated that the analysis referred to in the July 23, 2002 letter was completed. Schor stated that there was no proof that the drawings were so incomplete as to pose a danger to the safety of the public. The design requirements changed every day. He was part of a team and relied on the team to deliver the project successfully. Everyone understood there was more information to be added or revised. He never intended to mislead anyone, or to cheat, or to act in a dishonourable fashion. He acknowledged that information was missing from the drawings, but there was no way to obtain the information within the timelines imposed by the project. He could not explain why two-month-old drawings were submitted to the city, or why he was now being judged by the association on those same drawings. In the future he will ensure that missing or incomplete information is properly noted on his engineering drawings.

Decision

The association bears the onus of proving the allegations in accordance with the standard of proof that the panel is familiar with, set out in *Re Bernstein and the College of Physicians and Surgeons of Ontario* (1977) 15 O.R. (2d) 477. The standard of proof applied by the panel, in accordance with

the *Bernstein* decision, was a balance of probabilities with the qualification that the proof must be clear and convincing and based upon cogent evidence accepted by the panel. The panel also recognized that the more serious the allegation to be proved, the more cogent must be the evidence.

The panel regarded the allegations to be a serious matter. It had been alleged that the member sealed drawings that were incomplete and knew that those drawings would be submitted to the municipality. There was no evidence or allegation that the member's actions caused a significant loss or resulted in a risk to the safety of the public. Nonetheless, the panel felt that the alleged actions of the member and holder were not in accordance with the association's commitment to the ideals of competence and professionalism on the part of all of its members.

The discipline panel made the following decision after consideration of the testimony and evidence:

- 1. With reference to paragraph 13 of appendix A of the Notice of Hearing, the panel found that the behaviour of Schor did not meet the definition of incompetence as defined in section 28(3)(a) of the *Professional Engineers Act*, and noted in paragraph 14 of the allegations.**
- 2. With reference to paragraph 15 of appendix A of the Notice of Hearing, the panel found that the actions of Schor and Steelcon met the definition of professional misconduct as set out in the following sections of Regulation 941, and which were noted in the Notice of Hearing: Section 72(2)(a); Section 72(2)(d); and Section 72(2)(j), that Schor and Steelcon's conduct was regarded as unprofessional.**

Reasons for Decision

Regarding paragraph 13 in the Notice of Hearing and the allegation of incompetence, the panel considered that a finding under

this allegation implied that the panel believed that Schor had proven himself to be unfit to carry out the duties of a professional engineer. The panel accepted the testimony of Clark as credible evidence of numerous omissions and discrepancies in the Steelcon drawings of May 2002, and the panel also noted that Schor had himself admitted that many details were missing from those drawings. However, the panel accepted the often repeated contentions by Schor that he was dealing with the structural matters on a continuing basis, that he intended to deal with all structural matters on the project, and that he regarded the safety of the public as an important duty of a professional engineer. The panel concluded that, although the decision to submit the drawings with his seal and without explanations or qualification was misguided, his intention was to serve his client by advancing the project. The panel could not condone this decision, but neither could the panel believe that Schor had demonstrated that he was unfit to carry out the duties of a professional engineer. And therefore, the panel could not characterize the conduct of Schor as incompetence as defined in the Act.

Regarding the allegation that Schor and Steelcon are guilty of professional misconduct, the panel first considered section 72(2)(a) of the Regulation, which is repeated in paragraph 15 of the allegations. The testimony of Clark indicated approximately 30 instances of discrepancies and omissions from the May 2002 Steelcon drawings. Several of these items were later explained by the information provided on drawing SO. The panel did not attempt to make a specific finding regarding each of the alleged discrepancies in paragraph 12 of the allegations. The panel chose instead to accept the testimony of Clark, who concluded his testimony by stating these deficiencies and inconsistencies did not meet the standard of care that should reasonably be expected from a competent practitioner. The panel also noted that Schor had admitted that the drawings were not to his normal standard because of the scheduling pressures and that, given the opportunity, Schor would not submit drawings again in that same fashion. The panel concluded that the actions of Steelcon and Schor did not

meet the standards that a reasonable and prudent practitioner would maintain in the circumstances, and made a finding of guilt under section 72(2)(a).

The panel found that Schor and Steelcon were not guilty under section 72(2)(b). There was no indication or evidence of serious loss or risk to anyone affected by the engineering work completed by Steelcon. The panel recognized that it could theoretically be argued that Steelcon's client may have suffered as a result of delays or additional cost to obtain municipal approval. The panel also believed that it could be argued that the actions of Schor and Steelcon may have impacted others if the discrepancies and inadequacies of the drawings were never resolved. However, there was no convincing argument that this occurred and there was no compelling evidence that any third party was at risk or suffered any significant loss.

Regarding section 72(2)(d), the panel accepted the evidence of Clark that the Steelcon drawings did not comply with the provisions of the *Ontario Building Code* and the *Building Code Act*. The drawings should have been more detailed and should have dealt more completely with the issue of bracing and lateral support. Schor admitted that the matter of vertical bracing was deliberately omitted from the drawings to expedite the issuance of the foundations permit.

Regarding section 72(2)(j), the panel believed that Schor was acting in the best interests of his client, and that his decision to seal incomplete drawings was not motivated by dishonesty or deceit. However, the panel concluded that the drawings should have been more complete, or alternatively, marked as preliminary or qualified in some other manner. The panel also believed that Schor should have been more forthright with the city with respect to the issue of the bracing of the structure for lateral load resistance. The panel believed that the profession would regard the conduct of Schor and Steelcon as unprofessional, but neither disgraceful nor dishonourable.

Penalty Submissions

Royce submitted to the panel that the consideration by the panel of a penalty should address at least four components:

- ◆ punishment;
- ◆ specific deterrence to the member;
- ◆ general deterrence to the membership-at-large;
- ◆ rehabilitation.

Royce stated that building departments don't always have professional engineers on staff and must rely on the seal of engineering professionals to ensure that submissions accurately depict what will be built, and that projects are completed in accordance with applicable codes and will be safe for end users. This message must get through to the members. It has not got through to Mr. Schor, who apparently still does not understand the role of the city in the building permit process.

This hearing went on for two days before Schor admitted responsibility for his actions. Significant costs to the association have been incurred, and could have been avoided if Schor had admitted responsibility for his actions at the outset. Direct costs to the association have amounted to at least \$30,000 to date.

Royce recommended a penalty that included the following:

- ◆ suspension of Schor's licence for a period of two months, beginning 45 days from the date of the decision;
- ◆ a reprimand to Schor and Steelcon, the fact of which would be recorded on the Register of the association;
- ◆ a requirement for Schor to write and pass the association's Professional Practice Examination within nine months from the date of the written Decision and Reasons, failing which this matter would be brought back to the Discipline Committee for further penalty action;
- ◆ within 60 days from receipt of the decision, Schor and Steelcon are to submit a written undertaking acceptable to the Registrar that all documents and drawings issued by

Steelcon and Schor will be appropriately complete and detailed and that Schor and Steelcon will comply with section 53 of Regulation 941 and section 9.2 of the association's *Guideline to Professional Practice*;

- ◆ costs in the amount of \$30,000 to be paid to the association within one year of the date of the decision, failing which this matter would come back before the Discipline Committee; and
- ◆ publication in full with names in the official publication of the association. Publication is automatic in the case of a suspension and discretionary if there is no suspension.

In penalty submissions on behalf of Schor and Steelcon, Schor started by accepting the panel's decision regarding professional misconduct. He recognized that more information should have been on the drawings, and in the future he will ensure that this is done on his projects. At the outset of the hearing, he could not say that he was guilty, but he understands now that even though his intention was to ensure a properly engineered structure, and to provide the best service to his client, he should have provided better and more complete drawings with his seal. He did not feel that suspension and publication were warranted and seemed disproportionately harsh compared to his actions. He did not fully understand the options which might have been available leading up to the hearing, which could have saved some of the costs. He has learned a lesson in this hearing. He regards the panel's finding of professional misconduct as a very severe punishment to him.

The panel's independent legal counsel set out the recommended principles for the panel to follow in crafting a penalty, including specific and general deterrence, and remediation of the member. The penalty can be aggravated by a number of factors, including the seriousness of the conduct, previous discipline history, deceit or dishonesty, or evidence of harm to third parties. The penalty can

also be mitigated by evidence of good character, admission on the part of the member, and cooperation with the association. Admission by the member can reduce the penalty, but the member's decision to have a hearing should not result in a more severe penalty.

Penalty Decision

The panel made the following decision with respect to penalty:

- 1. An oral reprimand to be recorded on the Register of the association.**
- 2. Schor is to write and pass the association's Professional Practice Examination within one year of the date of the decision, failing which this matter would come back to the Discipline Committee for further penalty action.**
- 3. Within 60 days from receipt of the decision, Schor and Steelcon are to submit a written undertaking acceptable to the Registrar that all documents and drawings issued by Steelcon and Schor will be appropriately complete and detailed and that Schor and Steelcon will comply with section 53 of Regulation 941 and section 9.2 of the association's professional practice guideline.**
- 4. Costs in the amount of \$10,000 are to be paid to the association within one year of the date of the decision, failing which this matter would come back to the Discipline Committee for further penalty action.**
- 5. Publication in full with names in the official publication of the association.**

Schor was advised that he could waive his right to appeal the decision so that the reprimand could be delivered immediately. He agreed to waive his right to appeal and the oral reprimand by members of the panel was delivered at that time.

Reasons for Penalty Decision

The panel believed that a reprimand by his peers was necessary and appropriate, to convey to Schor the message that his conduct was less than what should reasonably be expected by the engineering profession.

Schor had not previously written the association's Professional Practice Examination, and the panel believed that preparing for and passing the exam would reinforce to Schor the importance of his duty to the public in his future professional engineering practice.

The panel agreed with Royce's submissions regarding the undertaking to comply with the regulation and guideline concerning the use of the engineer's seal and the need to qualify incomplete drawings as "not for construction" or "preliminary."

ENFORCEMENT

Toronto Man Ordered to Refrain from Using the Term "Professional Engineer" by Ontario Superior Court

At an application brought under the *Professional Engineers Act* in the Ontario Superior Court of Justice, Professional Engineers Ontario (PEO) obtained a declaration on December 23, 2004 that Sean A. Clyde of Toronto had breached the Act by misrepresenting himself as a professional engineer.

In her decision, the Honourable Madame Justice Herman also ordered that Mr. Clyde refrain from engaging in providing engineering services to the public. He was further ordered to refrain from using the terms "professional engineer," "engineer" and the abbreviated title "P.Eng.," in addition to paying PEO its costs of the application in the amount of \$6,607.41. PEO was represented at the Superior Court proceedings by Genevieve Currie of the law firm McCarthy Tétrault.

Mr. Clyde is not, nor has he ever been, licensed as a professional engineer in Ontario.

The cost award reflects only a portion of the actual costs of this matter to the association. The panel felt that Schor should be responsible for at least some of the costs that his actions had caused.

The panel was concerned that other professionals in the building industry may find themselves in similar circumstances on other projects and, therefore, publication to the membership-at-large would hopefully provide some measure of general deterrence to other Ontario engineers.

The written Decision and Reasons in this matter were dated December 13, 2004, and were signed by the Chair of the panel, David Smith, P.Eng., on behalf of the other members of the panel: James Dunsmuir, P.Eng., Diane Freeman, P.Eng., Anthony Warner, P.Eng., and Michael Wesa, P.Eng.

The application was brought after a PEO investigation revealed that Mr. Clyde had misrepresented himself as a professional engineer to a prospective employer and an employment agency in the Oakville and Mississauga areas. PEO determined that the employment agency did not carry out a membership check with PEO prior to recommending Mr. Clyde to the prospective employer, nor did it confirm that the engineering degree from UCLA, allegedly held by Mr. Clyde, was, in fact, valid.

Anyone wishing to check whether a prospective employee is properly licensed as a professional engineer in Ontario, should **contact PEO at 416-224-1100, ext. 1086.**

The success of this prosecution was due, in no small part, to the cooperation of the employment agency and the prospective employer. PEO appreciates their efforts.