

Moments & Reactions

The Newsletter of the Structural Engineers Association of Ohio (SEAOO)

Volume 1, Issue 1

January / February / March 2003

Inaugural Edition of Moments & Reactions

Monitoring the Pulse of Structural Engineering

Robert C. Rogers, PE

Well here it is! The first edition of a quarterly newsletter that will provide Ohio Structural Engineers with a single source of information related to our profession. It is hoped that the newsletter will serve as a forum for Ohio Structural Engineers to express themselves on technical issues as well as professional issues.

Within these pages, on a quarterly basis, many items that affect our profession will be discussed. Standard of care, "bidding" of professional services, certification of structural engineers, technical issues associated with the building codes, etc. will all be open topics of discussion. What I ask from my colleagues around the state is that each person who receives the newsletter set aside a small portion of their time (during the next two months) to author some brief articles to be contained in the next edition. This is our forum! We need to collectively use it for the betterment of our profession! ❖

INSIDE THIS ISSUE

- 1** Inaugural Edition of Moments & Reactions
- 1** SEAOO Membership
- 2** Certification for Structural Engineers
- 4** Check Out the Following

SEAOO Membership

Where Are We Headed ?

Robert C. Rogers, PE

As many of you are aware, the kick-off meeting for the Association was held approximately a year ago. Since that time, the SEAOO website (<http://home.fuse.net/seao/>) has been updated and a professional code of regulations (i.e., bylaws) for SEAOO has been created. The next issue that has received attention / discussion was the issue of membership fees for the association. A review of fees among current SEA's revealed an average membership fee of \$65 with a maximum of \$200 and a minimum of \$15. Of this amount, \$10 per member is paid to the National Council of Structural Engineers Associations (NCSEA). Much like yourself, the number of professional associations that seek my membership and accompanying money are many (ASCE, ACI, AISC, NSPE, etc.), and a fair portion of us face the day-to-day decision of where any "extra" money should be committed.

My greatest fear for SEAOO is the possible perception that it is "just" another association seeking membership fees. SEAOO must be an association for the members, and by the members, a truly grassroots organization working for the betterment of our profession in Ohio. My next fear is that ASCE members / leaders view SEAOO as a competitor for membership fees in the state of Ohio. I have been associated with ASCE since I was a student member in 1989 and I continue that membership today (as well as being a Charter Member of ASCE's Structural Engineering Institute). I applaud many of ASCE's efforts on behalf of our profession and will

continued on page 2

continue my allegiance to the Society. However, there are issues which I feel ASCE / SEI do not address for their structural engineering members who are practitioners. Discussion of these issues is reserved for another article, so I won't belabor the issue at this point.

Due to the concerns noted above, and as Temporary Chair of the Association, let me clearly state that SEAO is seeking your input, thoughts, effort and time rather than your money (which will be evident when one reviews the membership application). Charter membership in SEAO is currently being offered and requires three simple steps:

- (1) submission of qualifications commensurate with the membership level being sought as mandated by the SEAO Code of Regulations (posted on the SEAO website),
- (2) payment of the applicable membership fee which covers the cost of NCSEA membership, and
- (3) approval by SEAO of the membership application and acceptance of the applicable membership fee.

The application for membership is attached to the end of this newsletter. Although membership fees are necessary, in my mind, SEAO's success will be truly measured by the willingness of our members to become involved in our profession and make a difference. If we collectively sit on the sidelines and "gripe" about the state of our profession, without doing anything to improve it, then we may truly deserve the future that others define for us.

".....SEAO's success will be truly measured by the willingness of our members to become involved in our profession and make a difference."

Whether we are recognized as knowledgeable professionals whose work is paramount to public safety, or as mere "prospective bidders" for another piece of the design / construction money-pie, is within our control. Perhaps we deserve a

continued on page 4

Certification for Structural Engineers

A Lively Discussion at the National Level

Robert C. Rogers, PE

In October of last year the National Council of Structural Engineers Associations voted in favor of a resolution to move forward with a program that will establish certification for structural engineers. I personally believe this was a very positive step for our profession. It is crucial that we (i.e., structural engineers) decide what is required to achieve "certification" which will establish some basic uniform requirements related to the practice of structural engineering on a national level. It is important to note that the resolution that was passed did not define the qualifications required or the specifics of the program. The resolution merely acknowledged agreement within the profession that we needed to move ahead with the effort.

The action was bold enough to garner coverage by the magazine heavyweight *Engineering News Record* (ENR) in its October 28, 2002 edition (p. 12) and included both pros and cons related to the effort. A follow-up poll by ENR published in its December 16, 2002, issue showed that overall, 62% of the poll participants answered "yes" or "maybe" when asked if structural engineers should develop a certification program. Respondents who responded "no" uniformly provided comments opposed to certification.

I must admit that I was dismayed by some of the quotes contained within the December 16 article of ENR. One gentleman was quoted as saying "CPA's have many different specialties yet only one license. That works well enough." My immediate response to a quote such as this would be the distinction between a CPA and a structural engineer. A CPA practices accounting, not the design of buildings, bridges, and structures that must withstand loads, wind / earthquake forces, and provide for life safety. Another quote from an individual suggested "Structural engineering capabilities are already

continued on page 3

well and good – how many buildings have collapsed because of poor design? It's virtually unheard of. With today's computer-aided design failure is almost impossible." It would be important to point out to this individual that computer-aided design can be inherently more risky when the designer doesn't understand the theoretical basis of the program and its limitations. Critics against certification frequently ask for evidence that supports the idea of certification for structural engineers will improve the profession, prevent any abuse or neglectful situation from occurring, or increase public safety. I would respond with similar logic to the quoted statement above. Does one have any evidence that computer-aided design renders failure almost impossible? I would be more prone to liken computer-aided design to dangerous tool. In the hands of a competent user, it can be a distinct advantage. In the hands of an inexperienced user who does not perform sanity checks, or in the possession of an individual who does not have a sound theoretical understanding of its operation, it can be very dangerous.

Many critics have advocated opposition to certification for structural engineers. Reasons for the opposition and a response for these criticisms's from my perspective are as follows:

Certification will create confusion and bureaucracy.

First, I strongly believe if the requirements to create a baseline certification are established and clearly communicated to all engineers, as well as the public and other professionals, confusion will not be an issue.

Second, regarding bureaucracy, I would submit for consideration that bureaucracy, in my mind, is associated with a process that adds little value, is handled inefficiently, and is viewed primarily as a revenue generator.

I believe a goal for the certification program will be to win support from the vast majority of structural engineers. The certification program should be viewed, on a national level, as a process to put the structural engineers' internal →

→ house in order. If we can't even agree among ourselves what the minimum requirements should be on a national level to practice our profession, I believe we will continue to struggle for an identity as perceived by the general public and some fellow professionals. Once these requirements are established, the process must be created to work efficiently at minimal cost. Any variation from this will generate a perception, even among structural engineers, that the program is indeed a mere revenue generator. If this happens, and structural engineers abandon the certification program, it will be viewed as a major failure.

Certification duplicates existing programs and would create legal problems, especially from those denied approval.

It is universally acknowledged that on a national level, there are no uniform requirements for the practice of structural engineering. I believe this to render the first point of criticism invalid (i.e., it duplicates existing programs). Regarding possible legal entanglements, unfortunately, in the world in which we live, the possibility of legal issues will always arise. I firmly believe that if NCSEA, SEI, and CASE establish minimum requirements and implement the program appropriately, legal haggling will be minimal.

NCEES has taken notice of the certification effort and has formed the Structural Engineering Examination / Recognition Task Force (SEERTF) to investigate establishment of a uniform, national licensing for structural engineers through modifying the NCEES Model Law and Records Program. NCEES recognizes the issues regarding the national practice of structural engineering but believes certification by professional organizations would not improve the current situation. NCEES' task force is charged with proposing an amendment to the Model Law to include the definition of Model Law Structural Engineer (MLSE) with experience, examination, and education requirements. Once a MLSE is in place, individual state licensing boards could implement appropriate changes in their code / laws and could reference the NCEES MLSE. The

continued on page 4

shortfall with this approach is the lack of uniform implementation of the MLSE that might be garnered from the member boards of NCEES. It is very possible that not every state board may embrace the MLSE.

I believe the effort to define uniform requirements for structural engineers will move forward in some form. Certification provides a faster mechanism to move forward and promotes self-regulation of our profession, which I believe to be essential.

What evidence supports the idea that certification for structural engineers will improve the profession, prevent any abuse or neglectful situation from occurring, or increase public safety?

The view from inside the profession (as a day-in day-out practitioner) is much different from those outside the profession (legislators, general public, architects, etc.). We see the flaws, the varying degrees for standard of care, the contradictions, the ethical issues, etc. and if, as a group, we decide our house is in need of cleaning / repair, and we decide to place our own house in order, no evidence is necessary. In many cases clients / owners only want set of sealed plans (regardless of whether what is illustrated on the plans is sufficiently supported by sound engineering knowledge and supporting calculations / analysis). Unfortunately, structural systems, unlike mechanical and electrical systems, only receive testing when the high winds come through or the earth shakes, which is the last point when anyone wants to learn of a problem. ❖

fate of being viewed as subcontractors that can be judged on price alone if we allow others to define the value we add to a project. We should constantly remind many of our fellow professionals as well as the general public that the Structural Engineer's responsibility encompasses the safety of all people who daily utilize the buildings, bridges, and other structures that we design. ❖

CHECK OUT THE FOLLOWING

The subject of a certification program for structural engineers has garnered much attention from many different sources. Beyond the magazine *Structure* published jointly by NCSEA, SEI and CASE, the following publications have offered some food for thought regarding this discussion (several are available via the respective websites):

“Certification Program Crawls Forward Despite Controversy”, *ENR*, October 28, 2002, p. 12

“Certification for Structurals?”, *ENR*, December 16, 2002, p. 47

“Keep a United Licensure System”, *Engineering Times*, NSPE, October 2002

“Missing the Big Picture”, *Engineering Times*, NSPE, April 2002

“Task Force Supports Model Law for Structural Engineers”, *Licensure Exchange*, NCEES, April 2002, p. 8

❖

Return Address
 Street Number and Name
 City, State 98765-4321

BULK RATE
US POSTAGE
PAID
PERMIT NO.
98765

ADDRESS CORRECTION REQUESTED

Mailing Address
 Street Number and Name
 City, State 98765-4321

MEMBERSHIP APPLICATION

Remit Payment to
Structural Engineers Association of Ohio (SEAO)
6591 Hansbrinker Drive, Liberty Twp., Ohio 45044

PERSONAL INFORMATION

LAST NAME	FIRST NAME	MIDDLE INITIAL
EMPLOYER OR AFFILIATION		
ADDRESS (Circle one: Business or Home)		
CITY	STATE	ZIP CODE + 4
()	()	
PHONE NUMBER	FAX NUMBER	E-MAIL

PROFESSIONAL INFORMATION

Are you a licensed P.E. in Ohio? Yes (P.E. # _____) No
Are you licensed in other states? Yes No
(If Yes, please list states: _____)

If not a P.E., do you hold E.I.T. status? Yes (state _____) No

Are you currently practicing structural engineering? Yes No
(Please Provide Historical Dossier of Projects & Responsibilities)

Are you currently a student enrolled in an ABET Accredited engineering or technical program? Yes No
School Name _____ 2 yr. Program 4 yr. Program Grad. Program

CATEGORIES OF MEMBERSHIP

Please check the category of membership you are applying for and send in the appropriate application fee and dues. Membership categories and dues schedule are contained below.

Prof. Member Member Affiliate Member Student Member

SIGNATURE

I hereby state that the information provided is to the best of my knowledge true and accurate and that I will abide by the Association by-laws.

Signature

Date

SEAO USE ONLY	Approved: Y/N – Date
Dues Renewal Date: Check No.	Comments:

Membership Categories

A PROFESSIONAL MEMBER in the Association shall be licensed as a Professional Engineer under the branch of Civil Engineering and practicing in the field of Structural Engineering in the State of Ohio, or a person who, in the unanimous opinion of the Board of Directors, has attained such eminence in the field of structural engineering as to qualify him or her for the grade PROFESSIONAL MEMBER.

A MEMBER at the time of admission to the Association shall have been and is currently engaged for at least 4 years in structural engineering. Graduation in structural, civil or architectural engineering from an accredited college or university may be considered by the Board of Directors as equivalent of those 4 years.

AN AFFILIATE MEMBER shall, in the opinion of the Board of Directors, be qualified by reason of position to cooperate with Structural Engineers in the advancement of their professional knowledge, practice and welfare. An **AFFILIATE MEMBER'S** connection with the Association shall cease when that member no longer holds a position qualifying for membership.

A STUDENT MEMBER at the time of admission to the Association, and while holding this grade, shall be a Junior, Senior, or Graduate Student interested in structural or related engineering who is a full time student in an accredited engineering or architecture school or college.

2003 Dues Schedule

PROFESSIONAL MEMBER:

\$10.00 one-time application fee + \$25.00 member fee = \$35.00 total.

MEMBER:

\$10.00 one-time application fee + \$15.00 associate member fee = \$25.00 total.

AFFILIATE MEMBER:

\$5.00 one-time application fee \$15.00 associate member fee = \$25.00 total.

STUDENT MEMBER:

\$5.00 one-time application fee + \$5.00 student member fee = \$10.00 total.

Please make checks payable to **STRUCTURAL ENGINEERS ASSOCIATION OF OHIO**