

BEFORE THE COMMITTEE ON PROFESSIONAL CONDUCT AND THE EXECUTIVE
COMMITTEE OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

RICHARD JOHNS,
ANTHONY SZAMBOTI
Complainants,

v.

ROBERTO BALLARINI,
KASPAR WILLAM

ASCE Members.

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COMPLAINT NO. _____

AMENDMENT TO ORIGINAL ETHICS COMPLAINT

Complainants, Richard Johns (“Johns”), Anthony Szamboti (“Szamboti”), and nine (9) Members of the American Society of Civil Engineers (“ASCE”) present this Amendment to the Ethics Complaint submitted on September 10, 2018, against ASCE Members Roberto Ballarini (“Ballarini”) and Kaspar Willam (“Willam”), and respectfully show as follows:

NATURE OF CASE

1. This is an Amendment to an Ethics Complaint submitted pursuant to Article 3 of the ASCE Rules of Policy and Procedure. (See Exhibit A)
2. The Ethics Complaint relates to a Discussion Paper that was submitted to the Journal of Engineering Mechanics in May 2011, which was finally rejected in August 2013 by Journal Editors Roberto Ballarini and Kaspar Willam for allegedly being “out of scope” for the Journal.
3. This Amendment relates specifically to false statements made by Ballarini and by ASCE Managing Director and Publisher Dana Compton (“Compton”) on behalf of Ballarini to the Committee on Publication Ethics (“COPE”) during COPE’s review of the handling of the Discussion Paper. COPE conducted its review from October 2020 to April 2021.

4. Ballarini's false statements and Compton's false statements on behalf of Ballarini led COPE to believe falsely that the Discussion Paper was finally rejected on technical grounds, when in fact it was rejected for being "out of scope," and that Ballarini was not involved in rendering the final decision to reject the Discussion Paper, when all available evidence indicates that Ballarini was involved in rendering the final decision. COPE's misunderstanding of these essential facts materially affected the outcome of COPE's review, which was intended to provide constructive advice to the ASCE and to facilitate a resolution to this matter.

5. Ballarini's false statements and Compton's false statements on behalf of Ballarini violated provisions of the ASCE Code of Ethics that were in effect when this Ethics Complaint was initiated, including Canon 3 (Objectivity and Truthfulness) and Canon 6 (Uphold Professional Honor). Ballarini's false statements and Compton's false statements on behalf of Ballarini also violated three Responsibilities set forth in the updated ASCE Code of Ethics (provisions Ic, IIIa, and Ve) adopted on October 6, 2020.

6. As discussed in detail below, the facts surrounding Ballarini's false statements and Compton's false statements on behalf of Ballarini merit review by the Executive Committee for violation of the ASCE Code of Ethics, and enactment of such disciplinary measures as the Committee sees as fitting response thereto.

7. Nevertheless, as when the original Ethics Complaint was submitted, Complainants still wish to avoid referring this matter to the Executive Committee if a remedy can be mediated by the Committee on Professional Conduct ("CPC"). Complainants' proposed remedy is for the new Editor of the Journal, Franz-Josef Ulm, or an impartial associate editor whom he assigns, to perform an editorial review of the revised manuscript of the Discussion Paper and subsequently publish the Discussion Paper or provide a technically reasoned decision not to publish the

Discussion Paper, consistent with the procedure currently set forth in “Publishing in ASCE Journals” for review of discussion papers and appeals. Under this arrangement, Johns and Szamboti would reserve the right to appeal the review decision once more to Editor Ulm and subsequently to the Board of Governors of the Engineering Mechanics Institute (EMI), consistent with the procedure for review of appeals set forth in “Publishing in ASCE Journals.”

8. If the CPC is unable to mediate the above-proposed remedy, Complainants wish for the Executive Committee, upon conclusion of the disciplinary proceeding, to effectuate the above-proposed remedy through whatever means are appropriate, including but not limited to directly asking Editor Ulm to review and publish the Discussion Paper.

PARTIES

9. Richard Johns is an instructor at Langara College, Vancouver, Canada.

10. Anthony Szamboti is a mechanical engineer in the aerospace industry.

11. Roberto Ballarini was an editor of the Journal of Engineering Mechanics from 2012 to 2021.

12. Kaspar Willam was an editor of the Journal of Engineering Mechanics during the entire period in which the Discussion Paper was in review.

13. Complainants reserve the right to amend this Complaint to include any and all other persons affiliated in any way with the Journal who are or may be responsible for or involved with the wrongful conduct alleged herein.

JURISDICTION, VENUE, AND PROCEDURE

14. The ASCE Rules of Policy and Procedure allow ASCE members and non-members to submit complaints against ASCE members for violations of the ASCE Code of Ethics.

15. Upon information and belief, Roberto Ballarini and Kaspar Willam are Fellows of the ASCE.

16. According to the version of Article 3, Paragraph 3.0.3.3 that was in effect when this Ethics Complaint was initiated in September 2018, when ten (10) or more ASCE members make a request that a matter be referred to the Executive Committee, the case is required to be considered by the Executive Committee.

17. The Ethics Complaint was signed by ten (10) ASCE Members. This Amendment is signed by nine (9) ASCE Members, as one of the original ten members has since passed away. All such signatories hereto request that this matter be referred to the Executive Committee for consideration if an adequate remedy cannot be mediated by the CPC.

NEW FACTUAL ALLEGATIONS

A. Ballarini's 2013 Emails and the Journal's 2013 Decision Letter.

18. The false statements made by Ballarini and by Compton on behalf of Ballarini during COPE's review are contradicted by emails Ballarini sent to Szamboti in July 2013 and by the Journal's August 2013 decision letter. The relevant sections of Ballarini's email correspondence and the August 2013 decision letter are presented below, and all such correspondence is attached hereto as exhibits.

19. Necessary background to the Journal's 2013 rejection of Johns and Szamboti's appeal is that Willam and Ballarini had already decided in the fall of 2012 that the Journal would no longer publish papers related to the World Trade Center failures. On November 12, 2012, they sent a letter to Gregory Szuladzinski ("Szuladzinski") explaining their decision to decline a technical note that Szuladzinski had co-authored with Johns and Szamboti. That technical note was submitted on May 26, 2012, when Johns and Szamboti were still awaiting the initial decision

on the Discussion Paper they had submitted 12 months earlier. Willam considered the technical note to be within the scope of the Journal, sent it out for review, and declined it on technical grounds on September 18, 2012. Meanwhile, Ballarini was appointed Co-Editor in Chief in July 2012. Szuladzinski, Johns, and Szamboti appealed Willam's decision on October 3, 2012. Although the technical note had initially been sent out for review and rejected on technical grounds, Willam and Ballarini subsequently declined the appeal for being outside of the Journal's scope. Their November 12, 2012, letter stated:

“We have received your rebuttal to the decision on your technical note dated October 3, 2012, and have considered the technical merits of your appeal.

The Journal has published many papers and discussions to papers on this topic as have other ASCE Journals. The Journal of Engineering Mechanics' scope is advances in mechanics as applied to civil engineering, not unending forensic analyses. There are other venues for such things. It is our opinion that the Journal is not the appropriate forum for this paper.” (See Exhibit B)

20. On May 9, 2013, nearly 11 months after Johns and Szamboti appealed the Journal's rejection of their Discussion Paper, Szamboti sent Willam and Ballarini a letter via email urging them to take action on the pending appeal. Szamboti's letter clearly identified near the top of the letter the title of the original paper that the Discussion Paper was critiquing and the original paper's authors, Jia-Liang Le and Zdeněk Bažant. (See Exhibit C)

21. That same day, Ballarini responded to Szamboti via email, stating: “your discussion has been handled by Dr. Kaspar Willam; I will speak to him about it tomorrow.” In a subsequent email to Johns also on May 9, 2013, Ballarini stated: “I responded this morning that I

have not been involved with this paper, and that I plan to discuss it with Prof. Willam tomorrow to learn what is the history of this submission.” (See Exhibit D)

22. Five days later, on May 14, 2013, Szamboti followed up with Ballarini via email to ask if he had spoken with Willam. Ballarini responded via email on the same day: “yes. My understanding is that you will be notified of the final decision very soon.” (See Exhibit E)

23. Two months later, on July 7, 2013, Szamboti followed up with Ballarini via email to inquire about the status of the review and to request “a reasonable date in the near future for the Discussion to be published.” The next day, on July 8, 2013, Ballarini responded to Szamboti via email, copying Willam, ASCE Journals Director Angela Cochran, and ASCE Editorial Coordinator Jennifer Parresol, and stated as follows:

“last week I requested and received from the Journal office all papers, discussions and reviews it received and published that were associated with the World Trade Center. These hopefully will provide me with a better perspective on your submission. **My objective is fairness, but as I stated previously, with the intention of ending what could potentially be a never ending discussion on this topic (the Journal is not the appropriate venue for such on going discussions).** I will do my best to read through what I have received over the next week or so. **Then I will talk one more time to Dr. Willam to hear his opinion before making a decision.**” [Emphasis added.] (See Exhibit F)

In a subsequent email to Szamboti on July 8, 2013, Ballarini wrote:

“On August 4 I will travel to Evanston for the ASCE EMI Conference. There will be an Editor/Associate Editor meeting at that conference that will be attended by Dr. Willam and some representatives from the Journals office. **I will take this**

opportunity to meet person to person with Dr. Willam to discuss the appeal to your (declined) discussion, and determine whether the appeal has sufficient merit to overturn the original decision. I agree with you that this process has taken too long, but I hope you will [sic] patient for a few more weeks. I prefer meeting with individuals face to face instead of carrying on multiple email conversations that can lead to confusion and delay. **I assure you that I will get back to you by the end of the first week of August.** [Emphasis added.] (See Exhibit F)

Szamboti subsequently responded to Ballarini on the same day, stating that he did not object to the Journal's new scope for future submissions but that his Discussion Paper of Le and Bažant's paper should be published:

“Thank you for taking the time to respond (twice), saying you would do your homework on the issues involved, and that you would then get back to us after meeting with and discussing it with Dr. Willam. We can surely wait until the end of the first week of August.

“I would also say that we have no intent to burden the journal with endless building forensics, understand the reasons for the position the journal is now taking on it, and would not submit a new paper on the subject. It is only the correction of the paper we discussed that we would like published to ensure the record is clear and technically correct.” (See Exhibit F)

24. Ballarini's two emails to Szamboti on July 8, 2013, reveal a number of facts that are relevant to the question of whether Ballarini was involved in rendering the final decision on Johns and Szamboti's appeal:

- a. Ballarini requested from the Journals office all papers the Journal had published related to the World Trade Center, and he planned to review them in order to gain a better perspective on Johns and Szamboti's appeal. This suggests that Ballarini intended to be involved in rendering the final decision on Johns and Szamboti's appeal.
- b. Ballarini's stated editorial agenda was to no longer publish papers related to the World Trade Center.
- c. Ballarini's email dated May 14, 2013, gives the impression that he was not planning to be involved in rendering the final decision. However, it is clear from Ballarini's emails on July 8, 2013, that he intended by that point to render the final decision himself, after reviewing all papers the Journal had published related to the World Trade Center, and after consulting with Willam at the ASCE EMI 2013 Conference. The reason for this apparent transfer of responsibility for rendering the final decision on the Discussion Paper is not stated.
- d. Ballarini promised to contact Johns and Szamboti immediately after reaching a decision. The ASCE EMI 2013 Conference ran from August 4 to August 7, 2013. As mentioned below, the Journal sent the decision letter on August 9, 2013, two days after the ASCE EMI 2013 Conference ended.

25. On August 9, 2013, ASCE Publishing Manager Holly Koppel emailed Johns and Szamboti the final decision on their appeal. The Reviewers' comments stated:

“Your appeal of the decision on EMENG-1013 has been declined. This decision has been reached by the Co-Editors in Chief after a careful review of the original discussion, the review that recommended the discussion be declined, and your

rebuttal to the review. The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers), but instead it is a journal for fundamental contributions to engineering mechanics. **The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.**” [Emphasis added.] (See Exhibit G)

26. The Reviewers’ comments plainly state that the Discussion Paper was rejected because it was considered “out of scope” for the Journal.

27. The language in the Reviewers’ comments explaining the Journal’s scope is undeniably similar to the language in Ballarini’s first July 8, 2013, email to Szamboti:

- Ballarini on July 8, 2013: “My objective is fairness, but as I stated previously, with the intention of ending what could potentially be a never ending discussion on this topic (the Journal is not the appropriate venue for such on going discussions).”
- Reviewers’ comments: “The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers), but instead it is a journal for fundamental contributions to engineering mechanics.”

The undeniable similarity between the language in the Reviewers’ comments and in Ballarini’s July 8, 2013, email to Szamboti strongly suggest Ballarini drafted the Reviewers’ comments.

B. CPC’s 2019 Decision and Complainants’ 2019 Supplement.

28. On October 2, 2019, about 13 months after Complainants submitted the original Ethics Complaint, Tara Hoke (“Hoke”), staff liaison to the CPC, emailed Complainants the CPC’s decision, stating:

“Ultimately, the CPC feels that the concerns you raised are not an ‘ethics’ issue. They felt that editors should have broad discretion to determine **the scope of their journals**, and they were not supportive of providing ethical scrutiny for an editor’s decision to accept or reject content in the absence of a strong indication of fraud, conflict of interest, or similar malfeasance—which they did not see in this case.”

[Emphasis added.] (See Exhibit H)

29. In response, on October 29, 2019, Complainants submitted a Supplement to the original Ethics Complaint. In the Supplement, Complainants asked the CPC to reconsider the case based on Complainants’ rebuttal of the CPC’s reasoning and based on new information that provided a “strong indication” of Ballarini’s and Willam’s conflicts of interest. Complainants’ Supplement included a 63-page Appendix containing information related to Ballarini’s and Willam’s conflicts of interest. The categories of conflicts of interest included: (1) Ballarini’s and Willam’s relationships to Zdeněk Bažant and Jia-Liang Le, most notably Ballarini and Le’s ongoing relationship as co-workers at the University of Minnesota and co-authors on three papers around the time that the Discussion Paper was under review; (2) Bažant’s relationship to the Journal and to the Engineering Mechanics Institute; and (3) Willam’s role on the NIST World Trade Center investigation. (See Exhibit I)

30. In July 2020, Hoke notified Complainants via telephone calls with Johns and Complainant Scott Grainger that the CPC believed conflicts of interest did not play a role in the editors’ decision to reject the Discussion Paper, and that the CPC would recommend to the Executive Committee against finding that the editors violated the ASCE Code of Ethics.

31. Complainants were never provided with a letter, written statement, or report laying out the CPC’s decision. Complainants therefore did not know, and still do not know, on what

grounds the CPC concluded that conflicts of interest did not play a role in the editors' decision to reject the Discussion Paper.

C. Initiation of COPE Review.

32. After learning of the CPC's position, on July 24, 2020, Johns submitted a "concern" to the COPE Facilitation and Integrity Subcommittee in hopes of obtaining advice for how the ASCE should handle this case, and in hopes of reaching a resolution without the need for a disciplinary proceeding. Johns wrote in his submission to COPE:

"[W]e have always viewed the Executive Committee's disciplinary hearing as a last resort. We still wish to seek a resolution through the CPC, whose official mandate is to 'exercise every means possible to resolve . . . charges of professional misconduct through measures other than reference to the Executive Committee.' Tara Hoke has advised that ASCE has agreed for the case to be referred to COPE, **and that ASCE would welcome COPE's guidance and advice before deciding the matter.**" [Emphasis added.] (See Exhibit J)

33. According to COPE's website, COPE is a nonprofit organization "committed to educating and supporting editors, publishers and those involved in publication ethics with the aim of moving the culture of publishing towards one where ethical practices become a normal part of the publishing culture." COPE's website also states: "Over 20 years, COPE has grown to support members worldwide, from all academic fields. Our members are primarily editors, but also publishers and related organisations and individuals."

34. The ASCE and the Journal of Engineering Mechanics are members of COPE.

35. According to COPE’s website, “The primary role of the Facilitation and Integrity Subcommittee is not to adjudicate complaints, but instead to facilitate the resolution of disputes in a manner that is consistent with COPE's mission.”

36. Hoke, the staff liaison to the CPC and the ASCE’s general counsel, is chair of COPE’s Facilitation and Integrity Subcommittee and a member of COPE’s Trustee Board. As noted below, she was recused from COPE’s review of this case.

37. COPE has developed 10 “core practices” that comprise “the policies and practices journals and publishers need, to reach the highest standards in publication ethics.” These 10 core practices include: (1) Allegations of misconduct; (2) Authorship and contributorship; (3) Complaints and appeals; (4) Conflicts of interest; (5) Data and reproducibility; (6) Ethical oversight; (7) Intellectual property; (8) Journal management; (9) Peer review processes; and (10) Post-publication discussions.

38. Johns stated in the “concern” he submitted to COPE that five of COPE’s 10 core practices had been contravened in some manner. For the purposes of this Amendment, the two most relevant core practices Johns identified were “Post-publication discussions” and “Conflicts of interest.”

39. COPE’s core practice on “Post-publication discussions” states: “**Journals must allow debate post publication** either on their site, through letters to the editor, or on an external moderated site, such as PubPeer. They must have mechanisms for correcting, revising or retracting articles after publication.” [Emphasis added.]

40. In relation to COPE’s “Post-publication discussions” core practice, Johns stated in the “concern” submitted to COPE:

“We believe the editors violated the core practice by not allowing for debate post publication. We believe it is highly inappropriate for a duly submitted discussion paper to be considered ‘out of scope’ — especially one that claims to identify straightforward and fatal errors in a published paper. Based on the ethical obligations of editors outlined in ‘Publishing in ASCE Journals,’ the editors should actually have had a heightened interest in evaluating the validity of the claims made in our discussion paper and taking due action if the original paper was found to be erroneous.”

41. COPE’s core practice on “Conflicts of interest” states: “There must be clear definitions of conflicts of interest and processes for handling conflicts of interest of authors, reviewers, editors, journals and publishers, whether identified before or after publication.”

42. In relation to COPE’s “Conflicts of interest” core practice, “Publishing in ASCE Journals” states: “An editor shall avoid conflicts of interest and/or the appearance thereof.”

43. In relation to COPE’s “Conflicts of interest” core practice, Johns stated in the “concern” submitted to COPE:

“[W]e believe that editor Roberto Ballarini should have recused himself because of his relationship with one of the original paper’s authors (Ballarini was a supervisor/co-worker of Jia-Liang Le at the University of Minnesota, and the two of them co-authored a number of papers that were published around that time). The other conflicts of interest stated in the October 2019 ethics complaint supplement perhaps do not rise to the level of requiring recusal. However, in hindsight, they should be viewed as having possibly motivated the actions of the editors.”

D. False Statements by Ballarini and Compton during COPE’s Review.

44. On October 13, 2020, COPE staff member Iraxte Puebla (“Puebla”) emailed Ballarini and Compton, copying Johns, and stated as follows:

“Dr Johns has raised concerns about the fact that his submission in response to a publication in the *Journal of Engineering Mechanics* was rejected as out of scope. Dr Johns indicates that he had previously submitted the manuscript which underwent a technical review and was rejected on that basis. Dr Johns notes that he was informed that his resubmission would undergo a technical review but was instead rejected as out of scope. He also indicates that the handling editor had previously collaborated with one of the authors of the article that his paper was responding to, and he feels that this editor should have recused himself from the handling of the submission. Dr Johns feels that his paper should be sent for a further technical review and published if no technical flaws are raised.” (See Exhibit K)

45. Puebla’s October 13, 2020, email requested information on a number of items, three of which are relevant to this Amendment:

- “A summary and timeline of the steps taken to handle Dr Johns’ submissions.”
- “Clarification on the context to consider the submission out of scope if it was originally sent for review, and given that it is a response to a publication in scope for the journal.”
- “Information on any steps taken by the journal and publisher to look into the concerns about a potential competing interest on the part of the editor.”

46. Puebla's October 13, 2020, email also informed Ballarini and Compton that Hoke would not be involved in COPE's review of the case and that all COPE correspondence would be directed to Compton "as a separate contact at the publisher."

47. Ballarini responded to Puebla's email on the same day, October 13, 2020, copying Compton and Johns, and stated as follows:

"Note that as I explained in previous replies related to this issue, **I became involved with dr John's' submission at the end of the affair when Dr Willam had made a decision to reject it.** He is the one who was involved with its review (he sent it out for review etc), not me. I explained this numerous times. **My involvement wad [sic] limited to the co-signing of the decision letter,** which includes **our decision** that the Journal will not continue being a venue for detailed forensic analyses of the twin towers collapse." [Emphasis added.] (See Exhibit L)

48. Ballarini's October 13, 2020, statements are contradicted by his 2013 emails to Johns and Szamboti in the following ways:

- a. Ballarini did not become involved after Willam "had made a decision" to reject the appeal. Ballarini's emails to Szamboti and Johns and his discussion with Willam in May 2013 may not constitute "becoming involved." However, he had surely become involved by July 8, 2013, at which point a decision still had not been rendered, and he had just requested from the Journals office all papers the Journal had published related to the World Trade Center.
- b. It is clear from Ballarini's July 8, 2013, emails that he intended to render the final decision himself, after reviewing all papers the Journal had published related to

the World Trade Center, and after consulting with Willam at the ASCE EMI 2013 Conference.

- c. The only conceivable scenario where Ballarini's October 13, 2020, email may contain some degree of truth is that Ballarini deferred to Willam's opinion when the two of them spoke at the ASCE EMI 2013 Conference. But even this scenario means that Ballarini participated in rendering the final decision (i.e., he decided not to object Willam's opinion), and his involvement was not limited to co-signing the decision letter.
- d. However, that scenario is unlikely. The most likely scenario is that the two mutually agreed to reject the Discussion Paper as "out of scope." This scenario is the most likely for the following reasons: (1) Ballarini had stated his intention to render a final decision in consultation with Willam. (2) Ballarini was clearly the driving force in getting a final decision to be made after months of inaction by Willam. (3) Ballarini and Willam had already rejected another paper on the World Trade Center failures as out of scope. (4) The new scope of no longer publishing papers on the World Trade Center failures was adopted only after Ballarini had joined the Journal as a Co-Editor in Chief. (5) The language of the decision letter bears a strong similarity to the language in Ballarini's first July 8, 2013, email to Szamboti. (6) Ballarini stated in his October 13, 2020, email to Puebla: ". . . the decision letter, which includes **our decision** that the Journal will not continue being a venue for detailed forensic analyses of the twin towers collapse."

49. Two days later, on October 15, 2020, Compton, copying Ballarini and Johns, responded to Puebla's request for information, stating: "Thank you for reaching out to ASCE and

Dr. Ballarini about this situation. Please find our responses to your specific queries below.” Note that Compton is responding on behalf of ASCE *and* Ballarini. She presumably conferred with Ballarini before responding, and the information she provided was presumably based in part on information he provided to her. Compton also copied Ballarini on all of her emails to Puebla, so Ballarini had the opportunity to correct any inaccuracies. (See Exhibit M)

50. In the “summary and timeline of the steps taken to handle Dr Johns’ submissions,” Compton’s October 15, 2020, email stated as follows:

“In February 2013, the journal editorial office requested that Dr. Willam make an expedient decision, as we were receiving regular requests from the authors for an update. **Dr. Willam rendered a decision on the appeal in August 2013.** The letter advised the authors that there had been a review and **the Co-Editors were standing by the technical comments of the original reviewer and the original decision. The decision letter was written as a courtesy under the authority of both Co-Editors,** although the initial decision pre-dated the Co-Editor arrangement and was rendered by Dr. Willam.” [Emphasis added.]

51. In response to Puebla’s request for “Clarification on the context to consider the submission out of scope if it was originally sent for review, and given that it is a response to a publication in scope for the journal,” Compton’s October 15, 2020, email stated as follows:

“**The decline decision letter stated that the Co-Editors conducted a careful review** of the original discussion, the review that recommended the discussion be declined, and the authors’ rebuttal to the review. **Following such review, the Editors stood by the initial decision and stated that JEM is not a forensics journal** and therefore is not an appropriate forum for ongoing forensic debate

associated with a specific case study (in this case, the collapse of the World Trade Center towers).” [Emphasis added.]

52. The false claim that Willam rendered the final decision on his own is already addressed in paragraph 48 above. In addition, note that Compton stated in her October 15, 2020, email to Puebla: “The decision letter stated that **the Co-Editors** conducted a careful review . . .” [Emphasis added.] This is consistent with Ballarini’s request for all papers the Journal had published related to the World Trade Center and with his stated intention to review them before rendering a final decision.

53. In the part of Compton’s October 15, 2020, email responding to Puebla’s request for “A summary and timeline of the steps taken to handle Dr Johns’ submissions,” Compton stated that the decision letter “advised the authors that there had been a review and the Co-Editors were **standing by the technical comments of the original reviewer** and the original decision.” This statement is unambiguously false. The decision letter did not advise Johns and Szamboti that the Co-Editors were standing by the technical comments of the original reviewer. The decision letter advised them that the Co-Editors “**stand by their previous decision** to decline your discussion because it is out of scope.” [Emphasis added.]

54. In the part of Compton’s October 15, 2020, email responding to Puebla’s request for “Clarification on the context to consider the submission out of scope if it was originally sent for review, and given that it is a response to a publication in scope for the journal,” Compton stated: “**the Editors stood by the initial decision and stated that JEM is not a forensics journal** and therefore is not an appropriate forum for ongoing forensic debate associated with a specific case study.” [Emphasis added.]

55. It is true that “the Editors stood by the initial decision,” but the reason they gave for standing by the initial decision was that the Discussion Paper was “out of scope.” Coupled with Compton’s previous statement that “the Co-Editors were standing by the technical comments of the original reviewer,” Compton is falsely implying that the decision was reached on technical grounds, and that the editors were *further* stating that the Journal was not an appropriate forum for ongoing forensic debate associated with a specific case study. But the decision letter is unequivocally clear: The Discussion Paper was rejected as “out of scope,” and the basis for the “out of scope” rejection was that the Journal “is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers) . . .”. The decision letter gives no technical grounds for rejecting the Discussion Paper nor does it even assert that the Discussion Paper was rejected on technical grounds.

56. On October 17, 2020, Johns emailed Puebla, copying Compton and Ballarini, attempting to correct the false statements in Compton’s October 15, 2020, email. Addressing the question of whether Ballarini was involved in rendering the final decision, Johns provided quotes from Ballarini’s two July 8, 2013, emails and stated: “Not only does Dr. Ballarini express an intention to review our MS himself, he is also clearly planning to make the final decision on it himself, after consulting with Dr. Willam.” Addressing the question of the reason for the rejection of the Discussion Paper, Johns provided the Reviewers’ comments from the decision letter and stated: “While this mentions that the decision was reached after reviewing the original technical review of our MS (among other things), it does not say that our MS was finally rejected for technical reasons. Instead, it clearly states that it was rejected ‘because it is out of scope’.” (See Exhibit N)

57. Puebla confirmed receipt of Johns' email the next day, on October 18, 2020, copying Compton and Ballarini, and stated that she raised it to the attention of the member of the COPE Facilitation and Integrity Subcommittee reviewing the case. (See Exhibit O)

58. Johns' October 17, 2020, email ultimately was not included in the case report produced by COPE, so it is unclear whether the Facilitation and Integrity Subcommittee member read Johns' email correcting the false statements in Compton's October 15, 2020, email.

59. On October 20, 2020, Puebla emailed Compton, copying Ballarini and Johns, to request additional information regarding potential competing interests on the part of Willam and Ballarini. Puebla stated that potential competing interests could include: "**a shared affiliation** with the authors of the submission by Dr Johns or the authors of the article the submission critiqued, **a collaboration** with either group of authors **within a few years prior to the publication**, shared projects or funding for research." [Emphasis added.] (See Exhibit P)

60. On October 21, 2020, Compton responded to Puebla's request for further information, copying Ballarini and Johns, with the following relevant points (See Exhibit Q):

a. Dr. Willam:

- No competing interests during this timeframe.
- Dr. Willam was awarded a contract in June 2003 (7 years prior to the submission of the Le/Bazant paper on which Dr. Corotis rendered a final decision and 8 years prior to the submission of the Szamboti/Johns Discussion) to provide technical expertise for the NIST Final Report on the Collapse of the World Trade Center Towers.

b. Dr. Ballarini:

- Dr. Ballarini and Dr. Le were colleagues in the same department at the University of Minnesota from September 2010 through July 2014. During the timeframe that includes a few years before the submission of the manuscript in question until June 2013 (as detailed below), they did not co-author any papers nor have any mutual funding. However, starting in 2013 (as detailed below), they did initiate a collaboration that continues through today, and which lead [sic] to the co-publications listed below.

61. Compton's inclusion of Willam's role on the NIST World Trade Center investigation, although it falls outside the somewhat vague and arbitrary window of "a few years prior to the publication," is an admission that it constitutes a potential conflict of interest. Complainants' Ethics Complaint Supplement submitted on October 29, 2019, explains why Willam's financially compensated involvement in the NIST World Trade Center investigation could be seen as a conflict of interest. As noted above, "Publishing in ASCE Journals" states that "An editor shall avoid conflicts of interest and/or **the appearance thereof.**" [Emphasis added.] Complainants stated in the October 2019 Ethics Complaint Supplement and still maintain today:

"We accept that it would have been conceivable for someone in Willam's position to 'ensure an efficient and fair review' of Johns and Szamboti's Discussion Paper. Therefore, we are not contending that Willam should necessarily have recused himself solely on the basis of being a contractor on the NIST World Trade Center Investigation. However, the facts demonstrate unequivocally that Willam did not 'ensure an efficient and fair review,' that he did not 'give unbiased consideration to all manuscripts offered for publication,' and that he did not 'facilitate publication of appropriate comments and/or papers identifying [the Bažant Le Paper's] errors.'

Using ‘inference to the best explanation,’ Willam’s professional association with the NIST report and the progressive collapse theory was very likely a motivating factor in his failure to fulfill his obligations as an editor.” (See Exhibit I)

62. Compton’s list of Ballarini’s potential competing interests is mostly accurate and complete but requires some clarification:

- a. Ballarini and Le were not only “colleagues” at the University of Minnesota from September 2010 through July 2014. Ballarini was the chair of the department during this period. He was thus presumably involved in Le’s hiring and may have acted as a superior to Le.
- b. Since Ballarini and Le’s first paper together was published in June 2013, they were already collaborating prior to Ballarini’s involvement in handling Johns and Szamboti’s Discussion Paper critiquing Le’s paper.
- c. Ballarini and Le’s second paper together, published in The Journal of Engineering Mechanics in January 2014, was actually submitted on September 12, 2012, was accepted for publication on July 8, 2013 — the same day as Ballarini’s emails to Szamboti stating his involvement in reviewing the Discussion Paper — and was published online on July 10, 2013, two days later.
- d. Since Ballarini and Le made a conference presentation together in November 2013, they were presumably actively collaborating in preparation for the conference while Johns and Szamboti’s Discussion Paper was still under review.

63. On October 31, 2020, Puebla emailed Compton, copying Ballarini and Johns, to request additional information regarding the Journal’s policies and processes around conflicts of interest. Puebla’s second question in this email stated as follows:

“In the case of Dr Johns’ submission, **it appears that a perceived competing interest may arise in relation to the Chief Editor’s prior relationship with one of the authors of the publication that Dr Johns’ submission is critiquing. As noted in earlier correspondence, the expectation per COPE guidelines would have been for Dr Ballarini to be recused from the editorial evaluation and decision for the manuscript.** Could you please comment on this, and clarify what steps the journal took, or will take, to address this concern?” [Emphasis added.]
(See Exhibit R)

64. On November 2, 2020, Compton responded to Puebla’s request, copying Ballarini and Johns, and stated as follows:

“Again, per our earlier replies, Dr. Ballarini was not involved in handling the discussion, nor rendering a final decision. Dr. Willam was the handling Editor for the discussion as described below. The review, in retrospect, should have been written in clearer language that made clear which co-Editor took responsibility for the decision.” (See Exhibit R)

Note that the only defense Compton offered for why Ballarini did not recuse himself is the false statement that he was not involved in handling the Discussion Paper nor in rendering the final decision. Compton did not attempt to argue that Ballarini had no conflict of interest due to his relationship with Le.

65. On November 29, 2020, Puebla emailed Johns COPE’s report, copying Compton and Ballarini. Puebla’s email to Johns stated as follows:

“Based on the information we received, we consider that the journal followed an adequate process to follow up on the issues raised, **as they provided further**

clarification on the grounds for the rejection and on the editor involved in the handling of the submission.” [Emphasis added.] (See Exhibit S)

As is evident in Puebla’s statement, COPE’s conclusion “that the journal followed an adequate process” hinged on Ballarini’s and Compton’s false statements regarding “the grounds for the rejection” and “the editor involved in handling the submission.” Furthermore, COPE’s report stated:

“The journal provided a detailed timeline of the handling of the submissions and clarified that **the rejection of the resubmission was handled by Dr Willam as Chief Editor and not by Dr Ballarini.**” [Emphasis added.] (See Exhibit J)

COPE’s report further stated:

“The journal undertook a review of the submission history and of potential competing interests on the part of the editors, and confirmed that **the Chief Editor with potential competing interests did not handle the decision for rejection.**” [Emphasis added.] (See Exhibit J)

66. While Puebla’s email mentioned that the Journal provided “further clarification on the grounds for the rejection,” Compton’s statements regarding the grounds for the rejection were not specifically discussed in COPE’s report. In addition, as noted above, Johns’ October 17, 2020, email correcting the false statements in Compton’s October 15, 2020, email was not included in the report. The report merely stated as follows in regards to the grounds for rejection:

“The Facilitation & Integrity subcommittee views the decision on whether to publish Dr Johns’ manuscript within the remit of editorial decision making, which falls beyond what COPE can review as part of the COPE Facilitation & Integrity process.” (See Exhibit J)

67. On December 17, 2020, Ted Walter, the director of strategy and development for Architects & Engineers for 9/11 Truth, who was assisting Johns and Szamboti in their effort to have their Discussion Paper published, sent a letter to Puebla (copying Ballarini and Compton) on behalf of Johns and Szamboti (Johns was unavailable due to his end-of-semester duties) asking COPE to extend its review. Their stated grounds for asking COPE to extend its review were that Johns and Szamboti disputed some of the key facts presented by Ballarini and Compton, and that Johns and Szamboti believed that the decision to reject the Discussion Paper as “out of scope” was procedural rather than technical in nature, and thus COPE was well-positioned to provide important advice on it. (See Exhibit T)

68. The COPE Facilitation and Integrity Subcommittee subsequently decided to extend its review of the case, assigning it to a second member of the subcommittee. On January 22, 2021, Puebla emailed Compton, copying Ballarini and Johns, two new questions posed by the second subcommittee member based on their review of the case. On February 8, 2021, Compton emailed Puebla answers to the questions, copying Ballarini and Johns. The questions and answers are reproduced in full below. Compton’s answers are italicized to help distinguish them from Puebla’s questions. (See Exhibit U)

Puebla:

1. Dr Johns and Dr Szamboti’s submission discussed concerns, which they described to us as ‘straightforward and fatal errors’, about an earlier publication in the journal by Le and Bazant. COPE advises editors to follow up on concerns raised about publications in their journal, could you clarify whether the *Journal of Engineering Mechanics* pursued a review of the issues raised about the publication by Le and Bazant? If such an evaluation was pursued, we would be

grateful if you could provide details on the process followed to complete the assessment; if the evaluation was not pursued, could you please comment on the context that led to a decision not to look into the issues raised.

Compton:

*Drs Johns and Szamboti submitted a Discussion related to the publication by Drs Le and Bazant in May 2011. As described in ASCE's original response to COPE's inquiry, that Discussion went through a technical review, and Drs Johns and Szamboti received a decline decision, rendered by Dr. Willam, in May 2012. This decision was a decline *for technical reasons.* That is, the reviewer found substantial technical issue with Dr Johns' and Szamboti's Discussion submission, and extensive comments were provided to the authors with the decline decision.*

To be clear, the Le and Bazant paper has been subject to post-publication scrutiny, as another related Discussion was submitted by a different author, also in 2011, and published in 2012. That Discussion can be found here: <https://ascelibrary.org/doi/10.1061/%28ASCE%29EM.1943-7889.0000325>. In both cases, the Editor, Associate Editors, and reviewers involved (a) assessed the technical merit of the Discussions and (b) evaluated the concerns presented with regard to the Le and Bazant paper within the context of the technical merit of the Discussion. [Emphasis added.]

Puebla:

2. Dr Johns and Dr Szamboti's second submission to the journal was rejected as out of scope. In your earlier responses you indicated that this was due to a change in editorial scope where the Editor-in-Chief had established that the

journal would no longer consider submissions related to the World Trade Center. Could you please confirm the date at which this change in editorial policy regarding the journal's scope took place, and whether this change in scope was documented publicly?

Compton:

*To be clear, Drs Johns and Szamboti did *not* submit a second submission to the journal. Rather, in June 2012, they appealed the decline decision on the original Discussion.*

*The Editor declined the appeal in August 2013. The decline letter advised the authors that the **Editor** conducted a careful review of the original Discussion, the technical review that recommended the Discussion be declined, and the authors' rebuttal to the review. **Following such review, the Editor stood by the initial decision. The letter further stated that JEM is not a forensics journal and therefore is not an appropriate forum for ongoing forensic debate associated with a specific case study (in this case, the collapse of the World Trade Center towers). As explained in ASCE's original response to COPE's inquiry, the decision letter on the appeal was written as a courtesy under the authority of both co-Editors.***

This is not a matter of change in editorial scope, but rather upholding on appeal the decision of the original technical review. Further, since Dr Ballarini has taken the helm as sole Editor of JEM, he has held fast to the philosophy that JEM is not an appropriate forum for back-and-forth forensic debate but rather is a journal for fundamental contributions to engineering mechanics. As such, he has chosen not to consider submissions on this topic. However, that was not the reason for the

decline of the appeal—the appeal was declined because, after further review, the Editor upheld the technical decision on the initial submission. [Emphasis added.]

69. Compton stated in response to Puebla’s first question that “the Le and Bazant paper has been subject to post-publication scrutiny, as another related Discussion was submitted by a different author, also in 2011, and published in 2012.” However, the principle articulated in COPE’s “Post-publication discussions” core practice, which states that “Journals must allow debate post publication,” is not the kind of principle that can be applied selectively or can be satisfied by the publication of only a portion of the post-publication criticism that is received. Selectively accepting one discussion but rejecting another as “out of scope” is still a violation of the principle that “journals must allow debate post-publication.” Moreover, as noted in the original Ethics Complaint, accepting one discussion but rejecting another as “out of scope” is a violation of Canon 8 of the previous ASCE Code of Ethics, which stated that “Engineers shall conduct themselves in a manner in which all persons are treated with **dignity, respect, and fairness.**” [Emphasis added.]

70. In Compton’s response to Puebla’s second question, she repeated the same false statements made in her previous emails to Puebla, which are addressed above. However, in this email, Compton is now more explicit in alleging falsely that a change in scope “**was not the reason for the decline of the appeal**” and that “**the appeal was declined because, after further review, the Editor upheld the technical decision on the initial submission.**” [Emphasis added.] Compton also now falsely states in this email that the decision letter advises that the “Editor” conducted a careful review and stood by the initial decision, when in fact the decision letter states that the “Co-Editors” reached the decision.

71. The next day, on February 9, 2021, Johns emailed Puebla, copying Compton, and attempted to correct the false statements in Compton's February 8, 2021, email, stating: "I want to make sure that the members of the Facilitation and Integrity subcommittee are aware that Ms Compton's account of the JEM's actions contradicts the emails sent by the Journal's editors at the time." After presenting the text of the decision letter verbatim, Johns stated as follows:

"The text does mention carefully reviewing the technical documents, but does not say that our discussion was rejected on this basis. Instead, in the final sentence the editors state explicitly "The Co-Editors stand by their previous decision to decline your discussion **because it is out of scope.**" [Emphasis added by Johns.] Perhaps Ms Compton wishes that the editors had said something else, but wishing doesn't make it so. It's also clear that the part about the JEM not being a forum for forensic opinions is intended to support the "out of scope" decision. If our discussion were being rejected for technical reasons, this sentence would have no relevance at all, and I cannot imagine why the editors would include it.

Finally, a rejection for technical reasons is almost always justified by pointing out errors in the manuscript. As a journal reviewer myself, after spending a significant amount of time to analyse someone's work, and find mistakes in it, it would be ridiculous not to share these with the authors. It doesn't take any extra effort, and it's of enormous benefit to them. And the rebuttal we wrote in this case was not saying anything very complicated -- mostly just showing that data we used is indeed provided by the relevant NIST reports, as well as Bazant's previous work, and we were using standard engineering formulas. A mistake of this sort would be very

easy to point out, whereas if a manuscript is out of scope then there is no need to do so.

Looking at all the evidence, then, it is very clear that the rejection of our discussion was on the (supposed) basis of being out of scope.” (See Exhibit V)

72. Puebla confirmed receipt of Johns’ email the next day, on February 10, 2021, copying Compton, and stated that she raised it to the attention of the COPE Facilitation and Integrity Subcommittee. (See Exhibit W)

73. Despite Johns’ attempt to correct the record, on April 8, 2021, Puebla emailed Johns COPE’s amended report, copying Compton and Ballarini, and stated as follows (See Exhibit X):

“Upon consideration of the appeal per the journal’s process, **the editor decided to uphold the initial decision for rejection, due to the technical concerns outlined in the initial rejection and which the editor considered remained in the version of the manuscript considered on appeal.**” [Emphasis added.]

Puebla further stated in her email:

“While we consider that the journal followed an adequate process, we feel that a few areas of the journal policies and practices could be strengthened and we make the following recommendations for the journal:

- [First bullet point omitted for brevity.]
- An important aspect of the concerns about the case relate to the reasons behind the rejection of the appeal. **The subcommittee considers that this may have been prevented by clearer language in the editorial decision** issued in response to the appeal request, we recommend the journal reviews

their process for editorial decisions to **ensure that the letters for authors are as clear as possible in the future, particularly regarding decisions for rejection.** [Emphasis added.]”

74. As in the case of COPE’s first report, the amended report did not include Johns’ email dated February 9, 2021, in which he addressed the false statements in Compton’s February 8, 2021, email. (See Exhibit Y)

75. It is clear from (1) the language of the decision letter, (2) the lack of technical basis given in the decision letter, (3) Ballarini’s July 8, 2013, email stating his editorial agenda, and (4) Willam and Ballarini’s previous out-of-scope rejection of another paper on the World Trade Center failures, that there was no lack of clarity in the decision letter. The decision letter states plainly: “The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.”

76. In summary, Ballarini’s false statements and Compton’s false statements on behalf of Ballarini led COPE to believe falsely that the Discussion Paper was finally rejected on technical grounds and that Ballarini was not involved in rendering the final decision to reject the Discussion Paper. COPE’s misunderstanding of these essential facts materially affected the outcome of COPE’s review, which was intended to provide constructive advice to the ASCE, welcomed by Hoke in July 2020, and to facilitate a resolution to this matter. As a result of Ballarini’s and Compton’s false statements to COPE, the ASCE and all who manage and use its journals still lack clear guidance from COPE on the simple question of whether it is consistent or inconsistent with COPE’s core practices to reject a discussion paper submitted within the appropriate window as “out of scope,” and in particular when another discussion paper of the same original paper was considered to be in scope.

77. Had Ballarini and Compton not made the false statements described above, COPE very likely would have concluded that Johns and Szamboti's Discussion Paper was rejected through a process that violated COPE's core practices, and COPE likely would have recommended that the Discussion Paper undergo a technical review by an editor or associate editor with no conflict of interest.

E. The ASCE Code of Ethics.

78. The ASCE first adopted its Code of Ethics in 1914. It was most recently updated on October 6, 2020.

79. The ASCE Code of Ethics Canon 3 that was in effect when this Ethics Complaint was initiated stated as follows: "Engineers shall issue public statements only in an objective and truthful manner."

80. Subsection (b) under Canon 3 provided the following further guidance: "Engineers shall be objective and truthful in professional reports, statements, or testimony."

81. The ASCE Code of Ethics Canon 6 that was in effect when this Ethics Complaint was initiated stated as follows: "Engineers shall act in such a manner as to uphold and enhance the honor, integrity, and dignity of the engineering profession and shall act with zero-tolerance for bribery, fraud, and corruption."

82. Subsection (a) under Canon 6 stated as follows: "Engineers shall not knowingly engage in business or professional practices of a fraudulent, dishonest or unethical nature."

83. Responsibility Ic in the ASCE Code of Ethics adopted on October 6, 2020, states: "Engineers express professional opinions truthfully and only when founded on adequate knowledge and honest conviction."

84. Responsibility IIIa in the ASCE Code of Ethics adopted on October 6, 2020, states: “Engineers uphold the honor, integrity, and dignity of the profession.”

85. Responsibility Ve in the ASCE Code of Ethics adopted on October 6, 2020, states: “Engineers act with honesty and fairness on collaborative work efforts.”

COUNT 4:

**BALLARINI’S FALSE STATEMENTS VIOLATE ASCE CODE OF ETHICS CANON 3, CANON 6, AND
THREE RESPONSIBILITIES SET FORTH IN THE OCTOBER 2020 ASCE CODE OF ETHICS**

86. Canon 3 of the ASCE Code of Ethics in effect when this Ethics Complaint was initiated requires objective and truthful statements from ASCE Engineers.

87. Canon 6 of the ASCE Code of Ethics in effect when this Ethics Complaint was initiated prohibits ASCE engineers from engaging in “professional practices of a fraudulent, dishonest or unethical nature.”

88. The ASCE Code of Ethics adopted on October 6, 2020, requires ASCE engineers to express professional opinions truthfully and only when founded on adequate knowledge and honest conviction; to uphold the honor, integrity, and dignity of the profession; and to act with honesty and fairness on collaborative work efforts.

89. Roberto Ballarini made an objectively false statement when he stated to COPE that he became involved with Johns and Szamboti’s Discussion Paper only after Willam had made a final decision and that his involvement was limited to co-signing the decision letter.

90. In so doing, Ballarini violated all of the provisions of the ASCE Code of Ethics listed above.

91. Ballarini almost certainly supplied some of the information included in the false statements that Dana Compton made to COPE on his behalf, and he stood by without intervening when Compton made such false statements in emails on which he was copied.

92. In so doing, Ballarini violated all of the provisions of the ASCE Code of Ethics listed above.

93. When COPE's review reached false conclusions based on the false statements made by Ballarini and made by Compton on Ballarini's behalf, Ballarini did not intervene to correct COPE's understanding of the facts.

94. In so doing, Ballarini violated all of the provisions of the ASCE Code of Ethics listed above.

COUNTS 1, 2, AND 3:

BALLARINI'S AND WILLAM'S VIOLATION OF ASCE CODE OF ETHICS CANONS 3, 6, AND 8

95. Complainants make the following additional observations in support of Counts 1, 2, and 3 set forth in the original Ethics Complaint.

96. Hoke's October 2, 2019, email to Complainants indicates that the CPC concluded that Johns and Szamboti's Discussion Paper was rejected for being "out of scope." Otherwise, Hoke would not have stated, "Ultimately, the CPC feels that the concerns you raised are not an 'ethics' issue. They felt that editors should have broad discretion to determine **the scope of their journals** . . ." [Emphasis added.]

97. The fact that the Committee on Publication Ethics has a core practice which states that "Journals must allow debate post publication" means that it is an "ethics" issue when an editor limits the scope of his journal such that post-publication debate is prevented. **Quite simply, rejecting a discussion paper as "out of scope" is a violation of publication ethics.**

98. COPE concluded that Ballarini had at least a “perceived” conflict of interest and should have recused himself from any involvement in handling the Discussion Paper. He did not.

99. Complainants maintain that Willam’s role on the NIST World Trade Center investigation also constitutes a conflict of interest capable of biasing his handling of Johns and Szamboti’s Discussion Paper.

100. Willam and Ballarini’s rejection of the Discussion Paper as “out of scope” when both editors had conflicts of interest (or the appearance thereof) also violated Canon 4 of the ASCE Code of Ethics that was in effect at the time of their decision and at the time that this Ethics Complaint was initiated. Canon 4 states that “Engineers . . . shall avoid conflicts of interest.” Guideline 4e further states: “Engineers shall avoid all **known or potential conflicts of interest** with their employers or clients and shall **promptly inform their employers or clients of any business association, interests, or circumstances which could influence their judgment** or the quality of their services.” [Emphasis added.] Willam and Ballarini’s violation of Canon 4 was not addressed in the original Ethics Complaint because, as noted in the 2019 Ethics Complaint Supplement, Complainants thought that Willam and Ballarini’s actions were straightforwardly untruthful, unfair, and unethical, and that the motivation for their actions would not need to be established in order to demonstrate that their actions violated the ASCE Code of Ethics.

101. Ballarini and Compton unfortunately made the false statements they made because they knew it would be seen as unethical for Ballarini to have been involved in rendering the final decision and for the Discussion Paper to have been rejected as “out of scope.” Their false statements are proof that the ASCE Code of Ethics and publication ethics in general were violated.

PRAYER FOR RELIEF

102. Because the Committee on Professional Conduct “shall exercise every means possible to resolve ethical questions and charges of professional misconduct through measures other than reference to the Executive Committee,” for the reasons set forth above and in the original Ethics Complaint, Johns and Szamboti respectfully request that Editor Franz-Josef Ulm be urged to perform an editorial review of the revised manuscript of the Discussion Paper (or assign the review to an impartial associate editor) and subsequently publish the Discussion Paper or provide a technically reasoned decision not to publish the Discussion Paper, consistent with the procedure currently set forth in “Publishing in ASCE Journals” for review of discussion papers and appeals. Under this arrangement, Johns and Szamboti would reserve the right to appeal the review decision once more to Editor Ulm and subsequently to the Board of Governors of the Engineering Mechanics Institute (EMI), consistent with the procedure for reviewing appeals set forth in “Publishing in ASCE Journals.”

103. In the event that the above-proposed remedy is not agreed to by Editor Ulm and the mandatory disciplinary proceeding is held, Johns and Szamboti respectfully request that the Executive Committee find that Roberto Ballarini and Kaspar Willam have violated the ASCE Code of Ethics as follows:

- a. Roberto Ballarini and Kaspar Willam have violated Canon 3 of the Code of Ethics that was in effect until October 6, 2020;
- b. Roberto Ballarini and Kaspar Willam have violated Canon 4 of the Code of Ethics that was in effect until October 6, 2020
- c. Roberto Ballarini and Kaspar Willam have violated Canon 6 of the Code of Ethics that was in effect until October 6, 2020;

- d. Roberto Ballarini and Kaspar Willam have violated Canon 8 of the Code of Ethics that was in effect until October 6, 2020;
- e. Roberto Ballarini violated Responsibilities Ic, IIIa, and Ve of the ASCE Code of Ethics adopted on October 6, 2020.

104. Johns and Szamboti request that, upon finding that Roberto Ballarini and Kaspar Willam have violated the ASCE Code of Ethics, the Executive Committee effectuate the above-proposed remedy through whatever means are appropriate, including but not limited to directly asking Editor Ulm to review and publish the Discussion Paper.

105. Although they do not seek the imposition of disciplinary measures, Johns and Szamboti do not oppose Roberto Ballarini and Kaspar Willam being subject to disciplinary measures commensurate with the nature and scope of the violations, including a letter of admonition, suspension or expulsion or such other relief as the Board finds is warranted and just.

Respectfully submitted,

/s/ Richard Johns
Richard Johns

/s/ Anthony Szamboti
Anthony Szamboti

LIST OF EXHIBITS

- Exhibit A – Original Ethics Complaint, September 10, 2018
- Exhibit B – Willam and Ballarini decision letter to Szuladzinski, November 12, 2012
- Exhibit C – Szamboti letter to Willam and Ballarini, May 9, 2013
- Exhibit D – Ballarini emails to Szamboti and Johns, May 9, 2013
- Exhibit E – Ballarini email to Szamboti, May 14, 2013
- Exhibit F – Szamboti and Ballarini email correspondence, July 7 and 8, 2013
- Exhibit G – August 2013 Decision Letter, August 9, 2013
- Exhibit H – Hoke email to Complainants, October 2, 2019
- Exhibit I – Ethics Complaint Supplement, October 29, 2019
- Exhibit J – COPE Report, November 29, 2020 (includes Johns’ July 24, 2020, submission to COPE)
- Exhibit K – Puebla email to Ballarini and Compton, October 13, 2020
- Exhibit L – Ballarini email to Puebla, October 13, 2020
- Exhibit M – Compton email to Puebla, October 15, 2020
- Exhibit N – Johns email to Puebla, October 17, 2020
- Exhibit O – Puebla email to Johns, October 18, 2020
- Exhibit P – Puebla email to Compton, October 20, 2020
- Exhibit Q – Compton email to Puebla, October 21, 2020
- Exhibit R – Puebla email to Compton, October 31, 2020; Compton email to Puebla, Nov. 2, 2020
- Exhibit S – Puebla email to Johns, November 29, 2020
- Exhibit T – Walter letter to Puebla, December 17, 2020
- Exhibit U – Puebla email to Compton, January 22, 2021; Compton email to Puebla, Feb. 8, 2021
- Exhibit V – Johns email to Puebla, February 9, 2021
- Exhibit W – Puebla email to Johns, February 10, 2021
- Exhibit X – Puebla email to Johns, April 8, 2021
- Exhibit Y – COPE Amended Report, April 8, 2021

Exhibit A
To Ethics Complaint
Amendment

BEFORE THE COMMITTEE ON PROFESSIONAL CONDUCT AND THE EXECUTIVE
COMMITTEE OF THE AMERICAN SOCIETY OF CIVIL ENGINEERS

RICHARD JOHNS,
ANTHONY SZAMBOTI
Complainants,

v.

ROBERTO BALLARINI,
KASPAR WILLAM
ASCE Members.

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COMPLAINT NO. _____

ORIGINAL ETHICS COMPLAINT

Complainants, Richard Johns (“Johns”), Anthony Szamboti (“Szamboti”), and ten (10) Members of the American Society of Civil Engineers (“ASCE”) present this Ethics Complaint against ASCE Members Roberto Ballarini and Kaspar Willam, and respectfully show as follows:

NATURE OF CASE

1. This is an ethics complaint submitted pursuant to Article 3 of the ASCE Rules of Policy and Procedure.
2. It relates to a paper that was submitted to the Journal of Engineering Mechanics in May 2011, which was finally rejected in August 2013 by Journal Editors Roberto Ballarini and Kaspar Willam for allegedly being “out of scope” for the Journal. The “out of scope” rejection violated several ASCE Code of Ethics Canons, including Canon 3 (Objectivity and Truthfulness), Canon 6 (Uphold Professional Honor), and Canon 8 (Treat All Persons Fairly).
3. That the “out of scope” publication rejection violated these Canons is plainly evident from the fact that the paper in question was a Discussion paper, submitted to critique an original paper already published by the Journal. Further, the original paper being critiqued was

the fourth original paper co-authored by Zdeněk Bažant on the exact same topic in the Journal over the past decade. In other words, the Journal has decided not once, not twice, but four times, that the subject of Zdeněk Bažant’s paper is “in scope” for the Journal.

4. As discussed in detail below, the facts surrounding the Journal Editors’ decision to deny publication of the Discussion paper referenced above merits review by the Executive Committee for multiple ethical violations, and enactment of such disciplinary measures as the Committee sees as fitting response thereto.

5. Nevertheless, Complainants wish to avoid referring this matter to the Executive Committee if a remedy can be mediated by the Committee on Professional Conduct, whereby Editor Roberto Ballarini or an Associate Editor of the Journal perform an editorial review of the revised manuscript of the Discussion Paper and finally publish it, or provide a technically reasoned decision not to publish the Discussion Paper, consistent with the procedure set forth in “Publishing in ASCE Journals” for review of Discussion papers. Under this arrangement, as a safeguard against any continued wrongful conduct, Johns and Szamboti would reserve the right to appeal the review decision to the Journal Editor and subsequently to the Board of Governors of the Engineering Mechanics Institute (EMI), consistent with the procedure for appeals set forth in “Publishing in ASCE Journals.”

PARTIES

6. Richard Johns is an instructor at Langara College, Vancouver, Canada.
7. Anthony Szamboti is a mechanical engineer in the aerospace industry.
8. Roberto Ballarini has been an editor of the Journal of Engineering Mechanics from 2012 to the present.

9. Kaspar Willam was an editor of the Journal of Engineering Mechanics during the entire period in which the Discussion Paper was in review.

10. Complainants reserve the right to amend this Complaint to include any and all other persons affiliated in any way with the Journal who are or may be responsible for or involved with the wrongful conduct alleged herein.

JURISDICTION, VENUE, AND PROCEDURE

11. The ASCE Rules of Policy and Procedure allow ASCE members and non-members to submit complaints against ASCE members for violations of the ASCE Code of Ethics.

12. Upon information and belief, Roberto Ballarini and Kaspar Willam are Fellows of the ASCE.

13. According to Article 3, Paragraph 3.0.3.3, when ten (10) or more ASCE members make a request that a matter be referred to the Executive Committee, the case is required to be considered by the Executive Committee.

14. This Original Ethics Complaint is signed by ten (10) ASCE Members (see attached ASCE Ethics Complaint Forms), and all such signatories hereto request that this matter be referred to the Executive Committee for consideration if an adequate remedy cannot be mediated by the Committee on Professional Conduct.

FACTUAL ALLEGATIONS

A. The Original Paper.

15. In January 2011, the Journal published a paper by Zdeněk Bažant and Jia-Liang Le titled “Why the Observed Motion History of World Trade Center Towers Is Smooth” (the

“Bažant Le Paper”). (See Exhibit A) It was the fourth paper by Zdeněk Bažant that the Journal has published on the topic of the World Trade Center collapses.

16. The Bažant Le Paper builds on those previous Bažant papers to try and explain why the downward acceleration of the upper section of floors of the WTC Towers appeared to be so smooth.

B. The Discussion Paper.

17. On May 31, 2011, Johns and Szamboti submitted a Discussion paper that critiqued several aspects of the Bažant Le Paper (the “Discussion Paper”). (See Exhibit B) In particular, the Discussion Paper noted that several numerical values used in the Bažant Le Paper were erroneous, and when correct values were used, the opposite computational result was produced.

18. Over the ensuing months, Johns and Szamboti continued to inquire from time to time about the publication status of the Discussion Paper. (See Exhibit C)

19. On May 31, 2012 – exactly one year after it was submitted – they received comments from one of the two peer reviewers assigned to the Discussion Paper. That reviewer recommended that the Journal not publish the Discussion Paper. (See Exhibit D)

20. On May 31, 2011, Crockett Grabbe submitted a discussion paper for the Bažant Le Paper. The Crockett Grabbe discussion paper was accepted for publication on August 11, 2011 (within 70 days of its submission), and published in the October 2012 issue of the Journal. The technical content of the Crockett Grabbe discussion paper was, quite frankly, grossly deficient and astonishingly inferior to that of the Johns and Szamboti Discussion Paper.

C. The Appeal.

21. Johns and Szamboti responded to the reviewer's comments with detailed rebuttals on all points raised. They submitted their responses in an appeal dated June 7, 2012. (See Exhibit E)

22. Even though the reviewer comments and response thereto are immaterial to the present Ethics Complaint, they are attached hereto as Exhibits D and E. They are not relevant because the ultimate decision not to publish following the appeal was not based on technical merit, but instead on the allegation that the Discussion Paper was "out of scope" for the Journal.

23. On June 13, 2012, Johns and Szamboti received the email attached as Exhibit F. This email indicated that the "editor has requested that minor revisions be made based on the reviewers' evaluations" and that the "revision will only be seen again by the editor and will not undergo the entire review process." This email also gave a deadline of June 28, 2012 for the submission.

24. Johns and Szamboti made minor revisions to the paper based on the comments of the original peer review, and resubmitted the revised manuscript for publication on June 19, 2012. (See Exhibit G)

25. Once again, no action was taken for months, despite several inquiries by Johns and Szamboti. (See Exhibit H)

26. On May 9, 2013, Roberto Ballarini responded to Johns and Szamboti, informing them that he would talk with Kaspar Willam, who was the editor handling the Discussion Paper. (See Exhibit I)

27. On July 8, 2013, Roberto Ballarini responded to another inquiry from Johns and Szamboti, this time telling them he would speak to Kaspar Willam at the EMI Annual

Conference in early August 2013. Ballarini also stated in his July 8, 2013 correspondence that his objective in deciding whether to publish their Discussion Paper was “fairness” but “with the intention of ending what could potentially be a never ending discussion on this topic.” (See Exhibit J)

28. On August 9, 2013, Johns and Szamboti received an email which formally declined the Discussion Paper, stating as follows: “The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers) The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.” (See Exhibit K)

29. Johns and Szamboti have no record of any “previous decision to decline [the] discussion because it is out of scope.”

30. Johns and Szamboti appealed the decision to the EMI Board of Governors. Roberto Ballarini was Treasurer of the EMI Board of Governors and was EMI President-elect during the time that the EMI Board of Governors reviewed Johns and Szamboti’s appeal. On September 16, 2013, EMI President Roger Ghanem informed Johns and Szamboti that their appeal was denied, stating as follows: “The ASCE Journals Director provided a timeline, all submissions, and correspondence to review. Upon review of these facts and your specific complaint, the Board feels that you were treated fairly and all ASCE Publication processes were properly followed.” (See Exhibit L)

31. Johns and Szamboti protested the EMI Board of Governors’ decision to Angela Cochran, director of ASCE Journals. Cochran responded as follows: “It is your opinion that there are errors in the original paper. The reviewers did not agree with your position as stated in

your submitted discussion. The editors and the board stand by the initial review.” (See Exhibit M)

32. However, the editors did not cite the initial review as the basis for rejecting the Discussion Paper, nor did they provide a technical basis for rejecting the Discussion Paper. The Discussion Paper was rejected on the false grounds that it was “out of scope” for the Journal.

33. On October 18, 2013, after Johns and Szamboti protested the EMI Board of Governors’ decision further, Ghanem responded by maintaining the Board’s decision, stating as follows: “While your paper may very well be within the scope of the Journal, the Board’s review of your case was concerned with whether or not the submission was treated fairly and in a manner that is consistent with the policies of the Journal of Engineering Mechanics. The Board found that indeed, the processing of your paper by the Editors was in conformance with these policies. As such, the Board must stand by the decision that was communicated to you by the Editors.” Ghanem further defended the EMI Board of Governors’ decision in a subsequent email, stating as follows: “Your submission was rejected based on the outcome of a peer review process, not the whim of any one individual.” (See Exhibit N)

34. The record shows that the EMI Board of Governors did not evaluate whether the Discussion Paper was within or outside the scope of the Journal, a question that Johns and Szamboti argued was central to determining whether they were treated fairly and in accordance with ASCE publication processes. Furthermore, post-decision communications from Cochrane and Ghanem demonstrate that the EMI Board of Governors evaluated the case as if the Discussion Paper had been rejected on technical merit on the basis of the reviewer’s comments rather than for being “out of scope.”

35. The record shows that the EMI Board of Governors provided no explanation to Johns and Szamboti for why it felt that ASCE publication processes were followed, including why it was in accordance with ASCE publication processes for the editors to render an “out of scope” decision after the Discussion Paper had already undergone peer review.

36. Furthermore, in determining that Johns and Szamboti had been treated fairly, the EMI Board of Governors did not explain why it was fair for a separate Discussion paper about the Bažant Le Paper to be found within the scope of the Journal, but for the Johns and Szamboti Discussion Paper not to be. It is unclear if the EMI Board of Governors knew that a separate Discussion paper of the Bažant Le Paper had been published, though it may have been immaterial to the Board’s decision since, as noted above, it appeared to evaluate the case as if the Discussion Paper had been rejected on technical merit.

D. The ASCE Code of Ethics.

37. The ASCE first adopted its Code of Ethics in 1914. It was most recently updated on July 29, 2017.

38. The ASCE Code of Ethics, Canon 3, states as follows: “Engineers shall issue public statements only in an objective and truthful manner.”

39. Subsection (b) under Canon 3 provides the following further guidance: “Engineers shall be objective and truthful in professional reports, statements, or testimony.”

40. The ASCE Code of Ethics, Canon 6, states as follows: “Engineers shall act in such a manner as to uphold and enhance the honor, integrity, and dignity of the engineering profession and shall act with zero-tolerance for bribery, fraud, and corruption.”

41. Subsection (a) under Canon 6 states as follows: “Engineers shall not knowingly engage in business or professional practices of a fraudulent, dishonest or unethical nature.”

42. The ASCE Code of Ethics, Canon 8, states as follows: “Engineers shall, in all matters related to their profession, treat all persons fairly and encourage equitable participation without regard to gender or gender identity, race, national origin, ethnicity, religion, age, sexual orientation, disability, political affiliation, or family, marital, or economic status.”

43. Subsection (a) under Canon 8 states as follows: “Engineers shall conduct themselves in a manner in which all persons are treated with dignity, respect, and fairness.” □

44. Subsection (c) under Canon 8 further states as follows: “Engineers shall consider the diversity of the community, and shall endeavor in good faith to include diverse perspectives, in the planning and performance of their professional services.”

E. ASCE Publishing Guidelines for Editors.

45. The document published by ASCE titled “Publishing in ASCE Journals” includes a section called “Obligations of Editors” on page 6.

46. The first point under Obligations of Editors states as follows: The primary responsibility of an ASCE journal editor is to ensure an efficient and fair review process of manuscripts submitted for publication, and to establish and maintain high standards of technical and professional quality.

47. The third point under Obligations of Editors states as follows: An editor shall give unbiased consideration to all manuscripts offered for publication and shall judge each on its merits without regard to any personal relationship or familiarity with the author(s), or to the race, gender, sexual orientation, religious belief, ethnic origin, citizenship, professional association, or political philosophy of the author(s).

48. The eighth point under Obligations of Editors states as follows: If an editor is presented with convincing evidence that the substance, conclusions, references or other material

included in a manuscript published in an ASCE journal are erroneous, the editor, after notifying the author(s) and allowing them to respond in writing, shall facilitate immediate publication of an errata. If possible, an editor shall also facilitate publication of appropriate comments and/or papers identifying those errors.

49. “Publishing in ASCE Journals” also has a section called “ASCE Review Decisions”.

50. That section describes the review process as follows: **Upon initial review of a submitted manuscript**, the editor is permitted to take the following actions: Send the paper out for review; Suggest a transfer of the paper to another ASCE journal (with author permission); **Return the paper without review because the paper is outside the scope of the journal;** Return the paper without review because the grammar is substandard; Return the paper without review because the technical content is insufficient; Return the paper without review because the paper grossly exceeds the length limitations. (emphasis added)

51. The same section goes on to describe editorial decisions after peer review is complete as follows: Reviewers are experts who critically read and provide detailed reviews to improve the paper. Editors review the comments and will often provide a summary for the authors. **The decisions available after review are:** Accept the paper as submitted; Revise the paper for review by the editor only; Full re-review required after revisions; Decline. (emphasis added)

52. The option of rejecting a paper as “out of scope” is only possible upon initial review, cannot be done after peer review has been completed, and certainly is inappropriate after appeal.

COUNT 1:

BALLARINI'S AND WILLAM'S VIOLATION OF ASCE CODE OF ETHICS CANON 3

53. Canon 3 requires objective and truthful statements from ASCE Engineers.

54. Roberto Ballarini and Kaspar Willam rejected the Discussion Paper based on the objectively false statement that the Discussion Paper was out of scope for the Journal.

55. The first (and most obvious) reason the Discussion Paper was not out of scope is that it is a direct response and critique of a paper that had already been published by the Journal. This fact alone proves that Roberto Ballarini and Kaspar Willam's statement that the Discussion Paper was out of scope is false.

56. Second, the Journal has published at least seven original papers analyzing the collapse of the World Trade Center buildings, at least four of which include Zdeněk Bažant as an author. The Journal has also published numerous discussion papers and closure papers related to the original seven, bringing the total number of papers published on this topic to a dozen or more.

57. Third, Roberto Ballarini stated in correspondence to Johns and Szamboti: "My objective is fairness, but as I stated previously, with the intention of ending what could potentially be a never ending discussion on this topic (the Journal is not the appropriate venue for such on going discussions)." (See Exhibit J) Ballarini's intention is arguably reasonable in the context of any future submissions of papers analyzing the collapse of the World Trade Center buildings. But it has no bearing on whether the Discussion Paper is "out of scope" for the Journal, because the Discussion Paper was a direct response and critique of a paper already published in the Journal and was submitted by the required deadline of May 31, 2011.

58. Fourth, the Journal published the Crockett Grabbe discussion paper in the October 2012 issue. Obviously, the Journal editors believed that discussion papers for the Bažant Le Paper were appropriate and “in scope” for the Journal.

59. Fifth, the ASCE publishing guidelines impose heightened obligations on editors to facilitate “immediate publication of an errata” as well as “appropriate comments and/or papers” when errors in previously published papers are identified. Because the Discussion Paper alleged specific errors that fundamentally affected the central computational result of the Bažant Le Paper, it was false in the extreme to state that the Discussion Paper was out of scope for the Journal.

60. In sum, there is no rational basis for Roberto Ballarini and Kaspar Willam’s statement that the Discussion Paper is “out of scope” for the Journal, which means it lacks objectivity and is untruthful.

COUNT 2:

BALLARINI’S AND WILLAM’S VIOLATION OF ASCE CODE OF ETHICS CANON 6

61. Canon 6 prohibits ASCE engineers from engaging in “professional practices of a fraudulent, dishonest or unethical nature.”

62. First, as described above under Count 1, Roberto Ballarini and Kaspar Willam’s position that the Discussion Paper is “out of scope” for the Journal is dishonest because it has no rational basis in fact.

63. Second, Roberto Ballarini and Kaspar Willam’s decision to reject the Discussion Paper as “out of scope” after it had undergone peer review was unethical because it violated the established review protocol, whereby papers can only be rejected as out of scope upon initial

review by the editors. There is no procedural support in the ASCE publishing guidelines for rejecting a paper as out of scope after it has undergone peer review.

64. Third, Roberto Ballarini and Kaspar Willam's decision to reject the Discussion Paper as "out of scope" 27 months after its submission was also unethical because it violated, egregiously so, the heightened obligations imposed on editors to facilitate "immediate publication of an errata" as well as "appropriate comments and/or papers" when errors in previously published papers are identified.

COUNT 3:

BALLARINI'S AND WILLAM'S VIOLATION OF ASCE CODE OF ETHICS CANON 8

65. Canon 8 requires ASCE engineers to treat people with dignity, respect, and fairness. Canon 8 further requires ASCE engineers to "endeavor in good faith to include diverse perspectives" in the execution of their professional services.

66. Johns and Szamboti were not treated with dignity, respect or fairness during the Journal's review of the Discussion Paper.

67. The Discussion Paper was originally submitted in May 2011. It was finally rejected, on false grounds, in August 2013. The fact that it took over two years to finally reject the Discussion Paper is alone enough evidence that Johns and Szamboti were not treated fairly or with respect.

68. Although Kaspar Willam was apparently the editor initially responsible for reviewing the Discussion Paper, Roberto Ballarini did nothing to correct the treatment Johns and Szamboti received. To the contrary, Ballarini placed his intention of "ending what could potentially be a never ending discussion on this topic" above his purported objective of treating Johns and Szamboti with "fairness." In the case of this Discussion Paper, the two objectives

were mutually exclusive. Ballarini chose his editorial agenda over adhering to Canon 8 of the ASCE Code of Ethics, in spite of the fact that both objectives could have been satisfied by allowing publication of the Discussion Paper and closure by Bažant and Le while rejecting any future submissions of papers analyzing the collapse of the World Trade Center buildings.

69. The Discussion Paper was critical of a paper by Zdeněk Bažant, whose illustrious background and longstanding relationship to the Journal and the EMI include the following:

- a. He was editor-in-chief of the Journal from 1988 to 1994.
- b. He has apparently authored or co-authored more than 120 papers in the Journal since 1973. (See <http://www.civil.northwestern.edu/people/bazant/PDFs/publicat.pdf>).
- c. He was elected a Fellow of the EMI in 2013.
- d. He was in the company of Kaspar Willam and Roberto Ballarini at the EMI Annual Conference in early August 2013 (where Ballarini had planned to speak with Willam about the Discussion Paper and where they apparently decided to decline it for allegedly being “out of scope”). (See Exhibit O, photograph on page 5)

70. Bažant apparently was afforded preferential treatment in the review of the Bažant Le Paper. According to an email thread that Bažant inadvertently sent to Richard Johns, Bažant knew the identity of at least one reviewer of the Bažant Le Paper (George Voyiadjis, a member of the Journal’s editorial advisory board from 2005 to 2010) and was in communication with the reviewer during the paper’s review process. This conduct violates basic principles of peer review and several provisions set forth in

“Publishing in ASCE Journals.” Further, Bažant and Jia-Liang Le apparently submitted to the reviewer a list of five suggested reviewers, all of whom Bažant had a professional relationship with (George Voyiadjis; Luigi Cedolin, co-author of a book and various papers with Bažant; Milan Jirasek, co-author of various papers and former student under Bažant; Gianluca Cusatis, co-author and now Northwestern colleague of Bažant; George Dvorak, Northwestern colleague of Bažant). Such conduct also violates basic principles of peer review and several provisions set forth in “Publishing in ASCE Journals,” especially if the Journal used their suggested reviewers. (See Exhibit P) The Journal did not offer Johns and Szamboti the opportunity to submit a list of suggested reviewers.

71. The requirement that ASCE engineers endeavor to include diverse perspectives means that even papers critical of authors who have illustrious backgrounds and longstanding relationships to the Journal and the EMI, and who receive preferential treatment in the review of their papers, should be published as long as they have technical merit.

72. Further, the fact that the Journal published the Crockett Grabbe discussion paper indicates that Johns and Szamboti were not treated with the same fairness and level of respect.

73. Canon 8 requires Roberto Ballarini and Kaspar Willam to treat Johns and Szamboti with the same level of respect and fairness that Zdeněk Bažant, Jia-Liang Le, Crockett Grabbe, and everyone else enjoy at the Journal.

Prayer for Relief

74. Because the Committee on Professional Conduct “shall exercise every means possible to resolve ethical questions and charges of professional misconduct through measures other than reference to the Executive Committee,” for the reasons set forth above, Johns and Szamboti respectfully request that Editorial Roberto Ballarini or an Associate Editor of the

Journal be urged to perform an editorial review of the revised manuscript of the Discussion Paper and finally publish the Discussion Paper, or provide a technically reasoned decision not to publish the Discussion Paper, consistent with the procedure set forth in “Publishing in ASCE Journals” for review of Discussion papers. Under this arrangement, as a safeguard against any continued wrongful conduct, Johns and Szamboti would reserve the right to appeal the review decision to the Journal Editor and subsequently to the EMI Board of Governors, consistent with the procedure for appeals set forth in “Publishing in ASCE Journals”;

75. In the event that the above-proposed remedy is not agreed to by Roberto Ballarini or by the Journal’s editorial board, Johns and Szamboti respectfully request that the Executive Committee find that Roberto Ballarini and Kaspar Willam have violated the ASCE Code of Ethics, as follows:

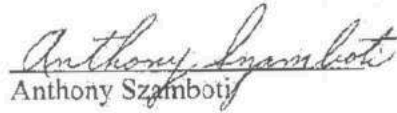
- a. Roberto Ballarini and Kaspar Willam have violated Canon 3 of the Code of Ethics;
- b. Roberto Ballarini and Kaspar Willam have violated Canon 6 of the Code of Ethics;
- c. Roberto Ballarini and Kaspar Willam have violated Canon 8 of the Code of Ethics;
- d. In the event that the above-proposed remedy is not agreed to by Roberto Ballarini or by the Journal’s editorial board, Johns and Szamboti further request that Roberto Ballarini and Kaspar Willam be subject to disciplinary proceedings and measures commensurate with the nature and scope of the violations, including a letter of admonition, suspension or expulsion;

e. Such other relief as the Board finds is warranted and just.

Respectfully submitted,



Richard Johns



Anthony Szamboti

Exhibit A

Why the Observed Motion History of World Trade Center Towers Is Smooth

Jia-Liang Le¹ and Zdeněk P. Bažant²

Abstract: The collapse of the World Trade Center towers was initiated by the impact of the upper falling part onto the underlying intact story. At the moment of impact, the velocity of the upper part must have decreased. The fact that no velocity decrease can be discerned in the videos of the early motion of the tower top has been recently exploited to claim that the collapse explanation generally accepted within the structural mechanics community was invalid. This claim is here shown to be groundless. Calculations show that the velocity drop is far too small to be perceptible in amateur video records and is much smaller than the inevitable error of such video records.

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CE Database subject headings: Structural dynamics; Structural failures; Damage; Monitoring; Buildings, high-rise; New York; New York City; Velocity; Imaging techniques.

Author keywords: Structural dynamics; Impact; Collapse; Damage; Structural monitoring.

Introduction

The collapse of the World Trade Center (WTC) towers has been explained as a gravity-driven process triggered by the collapse of a critical story heated by fire (Bažant and Zhou 2002; Bažant and Verdure 2007; Bažant et al. 2008; Bažant and Le 2008). All the objections of the proponents of the controlled demolition hypothesis have been shown invalid. Recently, though, a new objection, pertaining to the smoothness of the observed motion history of the tower top, has been raised and disseminated on the internet. This objection is based on the intuition that, if the collapse of WTC towers were gravity driven, then the existing amateur video of collapse would have to show a pronounced velocity drop at the moment at which the upper falling part impacted the lower intact story (the Naudet video was used for the collapse of WTC 1, and the WNBC live video was used for WTC 2).

Here it is shown that the velocity drop must have been three orders of magnitudes smaller than the error of an amateur video, and thus undetectable. An upper bound on the velocity drop is first obtained by simple hand calculations, and then the magnitude of velocity drop is determined accurately from the previously developed computer program (Bažant et al. 2008; Bažant and Le 2008).

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Simple Calculation of an Upper Bound on Velocity Drop

Although NIST determined that some columns in the fire zone underwent slow (i.e., viscoplastic) buckling spanning several floors, for the purpose on an upper bound we may assume that the progressive collapse of each tower was triggered by the collapse of a single story. Were the trigger provided by a multistory collapse, the underlying intact story would be impacted at a higher velocity, causing the velocity drop upon impact to be a smaller percentage of the impact velocity.

Consider first only the North Tower. The downward velocity of the upper part tower at the moment of impact on the concrete floor slab is

$$v_0 = \sqrt{2\alpha gh} = \sqrt{\alpha} \times 8.52 \text{ m/s} = \sqrt{\alpha} \times 19.06 \text{ mi/h} \quad (1)$$

where $g=9.81 \text{ m/s}^2$ =gravity acceleration; $h=3.7 \text{ m}$ =clear height of the columns; and α =uncertainty parameter ≤ 1 and probably very close to 1, which characterizes the resisting upward force of the heated columns, expressed as $(1-\alpha)mg$ where m =mass of the top part of the tower. An accurate calculation of α would require knowledge of the temperature history of all columns, which is unavailable. However, α must clearly be larger than $\alpha_{\min}=0.794$ which corresponds to the average resistance of cold columns calculated by Bažant and Verdure (2007; Fig. 3) and Bažant and Zhou (2002; Eq. (8)).

The concrete floor slab, of mass m_s , may be considered to behave upon impact as one rigid body. The impact is inelastic, with restitution coefficient=0 (which means that the upper part does not rebound from the slab). Conservation of momentum requires that $mv_0=(m+m_s)v'_0$, where v'_0 =velocity of the upper part with the underlying slab after impact. Hence

$$v'_0 = \frac{v_0}{1 + m_s/m} = 0.989v_0 \approx v_0 \quad (2)$$

The input numbers are taken from Bažant et al. (2008).

The subsequent motion of the top part is slowed down by the resistance of the steel columns of the underlying floor. After the displacement of only 3.2 mm, these columns reach their axial yield capacity, which is

$$F_p = A\sigma_0 = 1.513 \times 10^9 \text{ N} \approx 2.84mg \quad (3)$$

where $A=6.05 \text{ m}^2$ =combined cross section area of all the columns of the underlying floor. After plastic shortening of only 5.7 mm, the vertical resisting force F_b of all columns provided by a buckling collapse mechanism with three plastic hinges, described in Bažant and Zhou (2002), becomes smaller than F_p , and so the columns must buckle plastically (Bažant and Cedolin 1991, Chapter 8). Force F_b may be calculated from the free body equilibrium diagram in Fig. 5 of Bažant and Zhou (2002), which gives $(F_b/n)(\theta, h/2) = 2M_p$, or

$$\theta = 4nM_p/F_b h \quad (4)$$

where $M_p=0.32 \text{ MNm}$ =average yield bending moment of one column; $n=287$ =number of columns (approximately considered as identical); and θ =rotation of the plastic hinges at column ends. If θ is expressed from Eq. (4), the shortening of each column due to plastic buckling is found to be

$$u_c = (1 - \cos \theta)h \approx \frac{\theta^2}{2}h = \frac{8n^2M_p^2}{F_b^2 h} \quad (5)$$

The resisting force F_b rapidly decreases as θ and u_c grow. The displacement u_{eq} at which F_b becomes equal to the weight mg of the upper part of tower is obtained by substituting $F_b=(m+m_s)g \approx mg$

$$u_{eq} = \frac{8n^2M_p^2}{m^2g^2h} = 64.56 \text{ mm} \quad (6)$$

For displacements $u_c > u_{eq}$, $F_b < mg$ and so the motion of the upper part of tower accelerates. For $0 < u_c < u_{eq}$, the resisting force F_b of columns exceeds the weight mg of the upper part, and so the motion of the upper part decelerates.

An accurate calculation of the displacement history $u_c(t)$ during the deceleration and acceleration periods of time t requires numerical integration of the equation of motion, presented in Bažant and Verdure (2007) and Bažant et al. (2008). However, an upper bound $\Delta v_{\max} \sqrt{a^2 + b^2}$ on the drop of velocity $c = \dot{u}_c$ during the deceleration period can be easily obtained by hand calculations, based on the assumption that the resisting force for $u_c \in (0, u_{eq})$ is constant and equal to its maximum F_p given by Eq. (3). For this upper bound, the equation of motion of the upper part of mass $m+m_s \approx m$ reads

$$(m+m_s)\ddot{u} = -[F_p - (m+m_s)g] = \text{constant} \quad (7)$$

Integration from the moment of impact on the floor slab ($t=0$) to time $t=t_{eq}$ corresponding to the end of deceleration yields

$$u_{eq} = -\left[\frac{F_p - (m+m_s)g}{m+m_s} \right] \frac{t_{eq}^2}{2} + v_0' t_{eq} \quad (8)$$

from which one may solve

$$t_{eq} = \frac{(m+m_s)v_0'}{F_p - (m+m_s)g} - \sqrt{\frac{(m+m_s)^2 v_0'^2}{[F_p - (m+m_s)g]^2} - \frac{2(m+m_s)u_{eq}}{F_p - (m+m_s)g}} = 7.72 \times 10^{-3} \text{ s} \quad (9)$$

For comparison, if the motion continued at constant velocity v_0' given by Eq. (2) for $\alpha = \alpha_{\min} = 0.794$, the displacement increase would be $v_0' t_{eq} = 65.24 \text{ mm}$. The maximum displacement differ-

ence Δu_{\max} caused by deceleration from $t=0$ (the moment of impact) to $t=t_{eq}$ is obtained by substituting Eq. (9) into Eq. (8)

$$\Delta u_{\max} = v_0' t_{eq} - u_{eq} = 0.68 \text{ mm} \quad (10)$$

This upper bound should be compared to the displacement uncertainty in the amateur video record, which was shown by the error bars in Fig. 7 of Bažant and Le (2008) and is about $\pm 500 \text{ mm}$. Obviously even this upper bound on the effect of deceleration is far too small for being discerned in the video. It is thus no surprise that no drop of velocity can be detected.

For the South Tower, the upper impacting part is heavier but the columns of the impacted story underlying the fire zone are stronger. Analogous calculations yield $\Delta u_{\max} = 0.84 \text{ mm}$.

For the collapse of the subsequent stories, the initial crush-down velocity v_0' becomes much larger while the maximum deceleration due to the column resisting force will not change much ($\approx -2g$) and the deformation of columns u_{eq} at which the resisting force becomes smaller than the falling weight is about the same. Therefore, one will expect that velocity drop during the collapse of the subsequent stories will become smaller and its duration will be shorter. This explains why there is no discernable velocity change in the observed motion history of the tower top (Fig. 7 in Bažant et al. 2008).

For the collapse of lower stories of the tower, due to the dominance of other resisting forces, the deformation at which the deceleration ends is expected to be much larger than the deformation at which the upper falling weight exceeds the column resisting force. However, at the same time, the crush-down velocity during the collapse of these stories is also much higher, and is in the order of 40 m/s. Hence, the velocity drop will also not be perceptible from the motion of the tower top.

All the preceding analysis is based on the simplifying assumption of one dimensional motion. In reality, the top part of each tower was tilting during the collapse, which implies that the impact of the top part onto the floor slab was not simultaneous. This caused the motion history to be smoother than predicted by one-dimensional analysis, and thus any sudden velocity decrease to be even smaller and less detectable. Another simplifying assumption has been the neglect of the resisting force due to the comminution of concrete and ejection of air and debris (Bažant et al. 2008), which is, however, very small for the first few collapsing stories.

Motion during Two-Way Crushing of Upper and Lower Parts of Tower

The most accurate picture can be obtained by numerical solution allowing for a possible combination of crush-down and crush-up, i.e., for possible two-way crushing. The basic mode of gravity-driven collapse is crush-down followed by crush-up (Bažant and Verdure 2007). However, right after the impact of the upper part of tower onto the underlying floor slab, crush-up must occur simultaneously with crush-down, though only for a very short period (Bažant et al. 2008; Bažant and Le 2008).

The initial conditions for the two-way crush phase are obtained from the condition of conservation of momentum and energy during the impact (Eqs. 30 and 31 in Bažant et al. 2008). To calculate the velocity history accurately, the entire load-deflection curve of the plastically buckling columns must be considered (see Fig. 3 in Bažant and Verdure 2007, based on Bažant and Cedolin 1991, Sections 8.1, 8.2, and 8.6). Solution of the equations of motion (Eqs. 32 and 33 in Bažant et al. 2008) thus led to the velocity histories of crush-down and crush-up fronts shown in

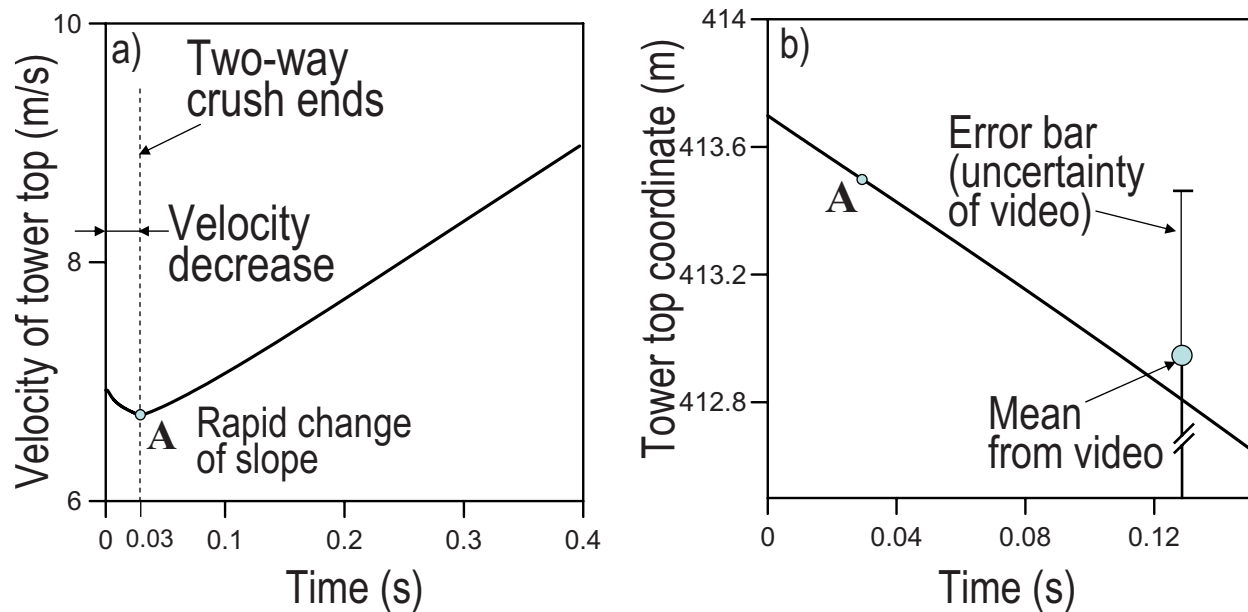


Fig. 1. Motion history during two-way crush phase

Fig. 9 in Bažant et al. (2008), which were supported by all the known observations.

During the two-way collapse phase, the velocity of the tower top can be calculated as

$$v_{top} = (1 - \lambda)(v_{cd} + \langle v_{cu} \rangle) \quad (11)$$

where $\langle x \rangle = \max(x, 0)$; λ = compaction ratio; and v_{cd} , v_{cu} = velocities of crush-down and crush-up fronts. Fig. 1(a) presents the velocity history of the tower top. As seen, the velocity of the tower top decreases during the two-way crush phase by only 3%, which lasts for only about 0.03 s. After that, the collapse proceeds in the one-way, crush-down, mode. During the crush-down phase, the velocity of the tower top depends solely on the velocity of the crush-down front, which is accelerating at the rate of about 6.2 m/s^2 . Calculations show an almost sudden decrease of the slope of the velocity profile, at 0.03 s, due to the sudden transition from the two-way crush phase to the one-way crush phase.

Fig. 1(b) shows the motion of the tower top during the first 0.16 s of the collapse of the story underlying the critical story. Based on Fig. 1(a), the tower top decelerates during the two-way crush phase, whose duration is 0.03 s, and accelerates afterwards. It can be seen that, compared to the observed data and the uncer-

tainties of observation, the velocity drop during the two-way crush phase is not discernable from the observed motion of the tower top. The reason is that the velocity drops by only 3% within only 0.03s, and increases again afterward, which is the start of one-way crush.

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Exhibit B



Richard Johns [REDACTED]

Fw: Discussion EMENG-1013 sent to Editor

Tony Szamboti [REDACTED]

3 June 2011 at 06:07

To: Richard Johns [REDACTED]

----- Original Message ----- From: "Journal of Engineering Mechanics" [REDACTED]

To: "Anthony Szamboti" [REDACTED]

Sent: Friday, June 03, 2011 8:35 AM

Subject: Discussion EMENG-1013 sent to Editor

Dear Mr. Szamboti,

Your submission, entitled "Reply and discussion of the paper Why the Observed Motion History of World Trade Center Towers is Smooth By Ja-Liang Le and Zdenek Bazant DOI: 10.1061/_ASCE_EM.1943-7889.0000198 Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84," has been assigned manuscript number EMENG-1013 and has been forwarded to the Editor to begin the review process.

You may check the progress of your submission by logging onto editorial management system at <http://jrnemeng.edmgr.com/>.

Thank you for submitting your work to this journal.

Sincerely,

Journal of Engineering Mechanics

Editorial Manager(tm) for Journal of Engineering Mechanics
Manuscript Draft

Manuscript Number: EMENG-1013

Title: Reply and discussion of the paper Why the Observed Motion History of World Trade Center Towers is Smooth By Ja-Liang Le and Zdenek Bazant DOI: 10.1061/_ASCE_EM.1943-7889.0000198
Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

Article Type: Discussion

Corresponding Author: Anthony Szamboti, BSME

Corresponding Author's Institution: None

First Author: Anthony Szamboti, BSME

Order of Authors: Anthony Szamboti, BSME;Richard Johns, PhD

Cover Letter

[Click here to download Cover Letter: Cover letter for Discussion of Le and Bazant 2011.pdf](#)



Dear Sir or Madam editor,

Attached please find a Discussion submission by myself and Richard Johns in reference to the below titled paper.

Why the Observed Motion History of World Trade Center Towers is Smooth

By Ja-Liang Le and Zdenek Bazant

DOI: 10.1061/_ASCE_EM.1943-7889.0000198

Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

We would appreciate hearing from you as soon as possible as to any issues you have with the submission here and when it may be published.

Sincerely,

Anthony Szamboti

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Reply and discussion of the paper

Why the Observed Motion History of World Trade Center Towers is Smooth

By Ja-Liang Le and Zdenek Bazant

DOI: 10.1061/_ASCE_EM.1943-7889.0000198

Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

Tony Szamboti

Richard Johns

1. Introduction

In their paper, Le and Bazant respond to the claim that the motion of the roofline of the World Trade Center North Tower (WTC 1), as captured in video footage, is inconsistent with the hypothesis of gravity-driven progressive collapse. Unfortunately they do not give any sources for this claim, but it is likely that they are responding to the work of Chandler (2010) and MacQueen and Szamboti (2009).

It is agreed on all sides that the collapse of WTC 1 initiated at the 98th floor leaving a 12-story upper part to fall onto a stationary 97-story lower part, as stated by NIST NCSAR 1-6, p. 156. Le and Bazant calculate the size of the velocity reduction (during impact between the falling upper part of the tower and the stationary lower part) to be about 3%. They also find that, after impact, the upper part continues to accelerate downwards at 6.2 m/s². These calculations are unfortunately based on assumptions about WTC 1, especially regarding the steel columns on story 97, which are without justification, and which are contradicted by NIST.

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2. Inertia Resistance

Le and Bazant first calculate the slowing of the upper portion of the building due to the inertia of the first story impacted. For reasons that unfortunately are not specified, the authors consider only the mass of the concrete floor slab to be involved in this exchange of momentum. Hence they calculate the effect of a descending mass of 54.18 Mkg striking a stationary mass of 0.627 Mkg. However, the concrete floor slab is only a small part of the floor, which includes rebar, steel decking, trusswork, and of course the live load. According to Bazant and Le (2008), from which Le and Bazant obtain the data used in their paper, m_2 = the mass of a single story is 3.87 Mkg for WTC 1. Using this value, rather than the mass of the concrete slab alone, we get a velocity ratio of $54.18/(54.18 + 3.87) = 0.93$. The velocity lost is therefore about 7% of the original, rather than the 1.1% claimed. (Note that this is already more than the 3% *total* loss calculated by Le and Bazant.)

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3. Column resistance

The 287 columns on the 97th story are treated by Le and Bazant as identical, even though the 47 core columns were on average much stockier than the 240 perimeter columns. The data used for a single column seem to be describing a perimeter column (stated in NIST NCSTAR 1-3D, p. 4 to be 14" square box columns) since the value $M_p = 0.32$ MNm may be obtained for a 14" square box column with wall thickness 6.75mm, or 0.27", according to the usual formula:

$$M_p = 1.5 \times b^2 t \times F_y$$

(b is the breadth of each flange, t is the flange thickness, and F_y is the yield stress, assumed by Le and Bazant to be 0.248 GN/m²).

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2 This flange thickness 0.27" is roughly consistent with the NIST NCSTAR 1-3D report, which states that "As
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4 the elevation in the building increased, the thickness of the plates in the columns decreased, but the
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6 plates were always at least 0.25 thick". (p. 5)
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10 The first error is then revealed when we apply this column specification, implicitly used by Le and Bazant,
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12 to calculate the total cross-sectional area of the columns. We then obtain a total area $A = 2.75\text{m}^2$, for the
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14 287 columns, which is much less than the authors' own value of 6.05m^2 . One is bound to wonder how
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16 this value of 6.05m^2 was obtained, since no reference or calculation is given for it. We shall show below
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18 that the correct value is roughly $A = 2.3$ (perimeter) + 1.7 (core) = 4m^2 .
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24 The authors' second error is to use a value of $F_y = 0.248\text{ GN/m}^2$ (36 ksi) for the yield stress of the columns
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26 on the 97th story. This is incorrect, as thin-walled perimeter columns on the upper stories are reported by
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28 NIST to be 55ksi – 100ksi (NCSTAR 1-6, p. 61, and NCSTAR 1-3B, Table 4-2, p. 52). We will conservatively
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30 estimate the average yield stress to be 65ksi, i.e. 0.45 GN/m^2 . Since the formula for M_p is linear with the
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32 yield stress F_y , correction of this error increases the value of M_p for the perimeter columns to 0.58 MNm.
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34 This is a very conservative estimate, since NIST reports the actual yield stresses to be above the nominal
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36 ones. (NCSTAR 1-6, p. 61) We see that the authors' estimate of 0.32 MNm is hardly an upper bound.
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43 The calculation of M_p for the core columns is laborious, since the columns are a variety of sizes and steel
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45 types. They are wide-flange columns, with flange dimensions ranging from 16.695" x 3.033" down to 8" x
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47 0.528", and either 36, 42, 45, or 50 ksi. (See the publicly available NIST SAP2000 model data, reproduced
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49 by MacQueen and Szamboti (2009), pp. 22-3.) The M_p values range from 2.01 MNm down to 0.09 MNm,
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51 with the average being 0.75 MNm. Again, this is far above the authors' estimate of 0.32 MNm.
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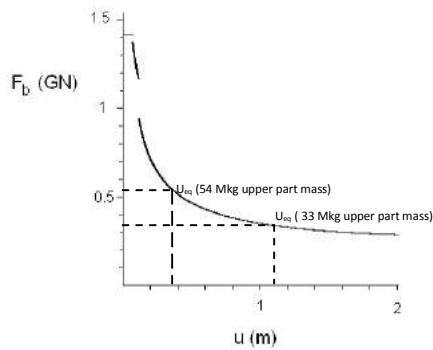
57 With these corrections in place, let us calculate the total yield load for all the columns. First the 240
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59 perimeter columns: $P = 240 \times 0.00675 \times 4 \times 0.3556 \times 0.45 \times 10^9 = 1.04\text{ GN}$.
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5 The calculation for the core is more laborious, due to the variation in column dimensions and yield stress.
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7 But using the same columns data, the total cross-sectional area of the core columns is found to be 1.69
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9 m², and the maximum load is 0.46 GN.
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14 Using these corrected values, we can calculate the load-displacement curve. For this we also need the
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16 column length, L, which is 3.7m in the case of the core columns, and 2.3m for the perimeter columns, due
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18 to the 1.4 m deep spandrel plates. The resistive force F_b is given by the formula below, where the number
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20 of columns is n , and u the reduction in column length.
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$$F_b = \frac{4nM_p}{L\sqrt{1 - [1 - (\frac{u}{L})]^2}}$$

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36 Adding the two resistive forces, due to the perimeter and core columns, we get the graph shown in Fig. 1.
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56 Fig. 1. Diagram of load vs. displacement during axial deformation and buckling
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2 By inspecting this graph we see that u_{eq} , the displacement at which the column resistance equals the 0.53
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4 GN weight of the upper part (i.e. the 54 Mkg mass used by Le and Bazant) is roughly 0.38m, rather than
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6 the 0.065m claimed.
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11 Up to this point we have used Le and Bazant's mass value of 54 Mkg for the upper part of the tower, but
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13 this is probably an overestimate since it conflicts with the data provided in the NIST WTC report
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15 concerning their description of the floor structures, total steel weight found in contracts, and live and
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17 superimposed dead loads. A more reasonable estimate, based on these data, is 33 Mkg for the 12-story
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19 upper part, i.e. 2.75 Mkg per story. This lower estimate is also much closer to typical mass per square
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21 meter values for other buildings sharing this type of construction, such as the Sears Tower and John
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23 Hancock building. For a detailed treatment of these arguments, see Urich (2007).
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31 From here on, therefore, we shall calculate using the 33 Mkg value as well as Le and Bazant's 54 Mkg. For
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33 example, using the lower mass value, u_{eq} occurs at roughly 1.12m as shown in Fig. 1.
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38 **4. Calculating the Velocity Curve**

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41 In order to verify the accuracy of the gravity-driven model, we shall calculate the velocity curve for the
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43 roof line, and compare it with the behavior of WTC 1 itself. Fortunately there is high-resolution footage of
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45 the collapse of WTC 1 shot by professional filmmaker Etienne Sauret, and used for the documentary film
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47 *WTC - The First 24 Hours* (2002). Each pixel of this footage represents 0.27m of the tower, and the frame
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49 rate is 30 per second, allowing for very accurate measurements of the motion.
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54 David Chandler, one of the "internet" sources that Le and Bazant presumably refer to, has analyzed this
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56 motion using Tracker, an open source video analysis tool. His graph is shown below, together with two
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58 velocity plots for a gravity-driven collapse.
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The calculated velocity of the roofline was obtained numerically using the load-displacement curve shown above. We also assumed Le and Bazant's freefall acceleration during the collapse of the first story, and the two possible mass values, as mentioned above. The floors are treated as rigid and incompressible, so that no energy is lost deforming them, even though in reality this would be a significant energy drain. The upper part of the building is also modeled as a rigid block, which Le and Bazant regard as a reasonable approximation.

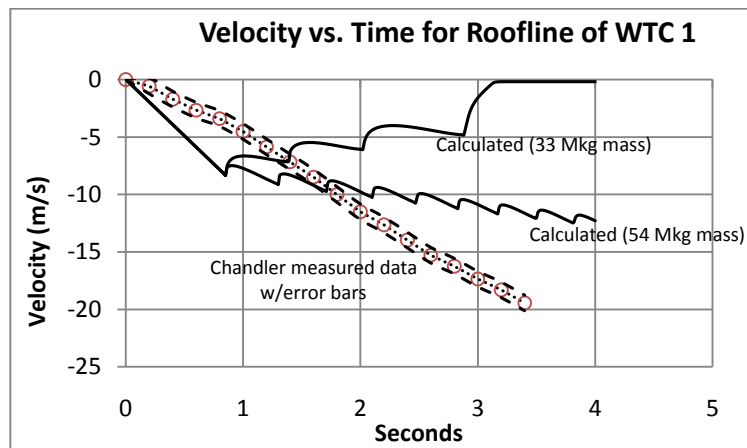


Fig. 2. Measured and calculated velocity curves

It is questionable whether the velocity fluctuations seen on the graph in Fig. 2 (using the 54 Mkg mass value claimed by Le and Bazant) would be visible on the video, since the measurement error is ± 0.675 m/s. But it is clear that the calculated average downward acceleration is much less than the observed value.

With the 33 Mkg mass the calculated velocity decrease is roughly 2 m/s, and should be visible in a velocity plot obtained from the Sauret video footage. Also, the average acceleration after impact is negative (i.e. upward), which would be easy to observe.

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3 **5. Conclusion**
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7 The analysis of Le and Bazant, while sound theoretically, uses incorrect input values. These errors each
8 have the effect of reducing the resistance of the lower part of the building. As a result, their calculated
9 velocity drop on impact is too low, and the calculated acceleration following that drop is too high.
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19 **References**
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22 Chandler, D. (2010). "Destruction of the World Trade Center North Tower and Fundamental Physics",
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Publication Title: _____

Manuscript/Chapter Title: DISCUSSION OF THE PAPER
"WHY the observed MOTION HISTORY of WORLD
TRADE CENTER TOWERS IS smooth"

Author(s) - Names and addresses of all authors

1. ANTHONY SZAMBOTI
2. RICHARD JOHNS



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ANTHONY SZAMBOTI

Print Author's Name

Print Agent's Name & Title

Anthony Szamboti

Signature of Author (in ink)

Signature of Agency Rep (in ink)

Date: May 31, 2011

Note: If the manuscript is not accepted by ASCE or is withdrawn prior to acceptance by ASCE, this transfer will be null and void.

Exhibit C



Richard Johns [REDACTED]

Query to JEM to see when our Discussion is to be published

Tony Szamboti [REDACTED]

16 July 2011 at 15:09

To: Richard Johns [REDACTED]

Richard,

It has been 46 days since we submitted our Discussion to the Journal of Engineering Mechanics and about 44 days since they notified us that it was sent to an editor.

We haven't heard anything in the intervening period so I decided to send an e-mail note asking about it. The message has to be sent through their system and is thus not normal e-mail. I did hit the CC for co-authors, which we are both listed as in the information they requested about us, but I am not sure if that included your e-mail address, so I am sending you what I wrote to them below.

Ref.: Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

By Ja-Liang Le and Zdenek Bazant

DOI: 10.1061/_ASCE_EM.1943-7889.0000198

Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

Authors: Tony Szamboti and Richard Johns

Dear Sir or Madam,

It has been more than six weeks since our Discussion paper, referenced above, was sent to a JEM editor. As we have not heard anything from the Journal in the intervening time, we are curious to know when we can expect the Discussion to be published.

Sincerely,

Tony Szamboti



Richard Johns [REDACTED]

Fw: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

Tony Szamboti [REDACTED]

24 September 2011 at 11:46

To: ASCE Journal-Submissions1 [REDACTED]

Cc: Richard Johns [REDACTED]

Jennifer,

It has now been more than sixteen weeks since our Discussion paper, referenced below, was sent to a JEM editor. We have not heard anything from the Journal in the intervening time, except for your brief reply below of July 18. We are concerned about the time that has elapsed, and request that you notify the editor of our concern. We hope to hear from you soon.

Ref.: Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

By Ja-Liang Le and Zdenek Bazant

DOI: 10.1061/_ASCE_EM.1943-7889.0000198

Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

Authors: Tony Szamboti and Richard Johns

Sincerely,

Tony Szamboti

[Quoted text hidden]



Richard Johns [REDACTED]

Fw: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

Tony Szamboti [REDACTED]

24 September 2011 at 11:46

To: ASCE Journal-Submissions1 [REDACTED]

Cc: Richard Johns [REDACTED]

Jennifer,

It has now been more than sixteen weeks since our Discussion paper, referenced below, was sent to a JEM editor. We have not heard anything from the Journal in the intervening time, except for your brief reply below of July 18. We are concerned about the time that has elapsed, and request that you notify the editor of our concern. We hope to hear from you soon.

Ref.: Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

By Ja-Liang Le and Zdenek Bazant

DOI: 10.1061/_ASCE_EM.1943-7889.0000198

Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

Authors: Tony Szamboti and Richard Johns

Sincerely,

Tony Szamboti

[Quoted text hidden]



Richard Johns [REDACTED]

Re: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

Tony Szamboti [REDACTED]

20 February 2012 at 23:13

To: ASCE Journal-Submissions1 [REDACTED]

Cc: Richard Johns [REDACTED]

Dear Jennifer,

It has now been almost *nine* months since our Discussion paper (manuscript #EMENG-1013) was given to a JEM editor, and we have yet to hear anything at all from the editor. We have noticed in the JEM archives that discussion papers (if accepted) are often accepted in about one month, and generally in no more than eight months. Furthermore, our paper simply points out numerical errors, which may easily be verified by anyone, so reviewing our manuscript should be no great burden.

We believe that the errors discussed in our paper are serious, and need to be brought to the attention of the civil engineering community. It is important to note that the "Obligations of Editors" include the following:

If an editor is presented with convincing evidence that the substance, conclusions, references or other material included in a manuscript published in an ASCE journal are erroneous, the editor, after notifying the author(s) and allowing them to respond in writing, shall facilitate immediate publication of an errata. If possible, an editor shall also facilitate publication of appropriate comments and/or papers identifying those errors.

Since our corrections have not been challenged, after almost nine months, it can only be assumed that they are accepted as correct by the JEM. Why then has our discussion (and an errata) not been published?

Finally, it is ironic that, after some discussion with him on the topic in question by email, one of the authors of the paper we discuss, Zdenek Bazant, encouraged one of us to submit a discussion paper to the JEM on this topic. Bazant wrote (Dec 1, 2010):

"I really have no more time for this kind of dialog. But if you submit a discussion to JEM ASCE, the best journal in the field, I will have to spend the necessary time to answer it in detail.

Sincerely yours, ZP Bazant"

We sincerely hope the editor will respond here and at the very least communicate with us on the matter.

Thank you for your continuing attention,

Tony Szamboti
[REDACTED]

----- Original Message -----

From: "ASCE Journal-Submissions1" [REDACTED]

To: "Tony Szamboti" [REDACTED]

Sent: Monday, November 07, 2011 10:47 AM

Subject: RE: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

Dear Tony Szamboti,

Your submission EMENG-1013 is under review. I am contacting the Editor.

Sincerely,
Jennifer Parresol

Editorial Coordinator
ASCE
1801 Alexander Bell Drive

Reston, VA 20191
[REDACTED]

-----Original Message-----

From: Tony Szamboti [REDACTED]
Sent: Sunday, November 06, 2011 11:50 AM
To: ASCE Journal-Submissions1
Subject: Re: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

Jennifer,

It has now been over five months since our Discussion paper (manuscript # EMENG-1013) was given to a JEM editor, and we have yet to hear anything at all from the editor. Did the editor respond to your reminder? Is this a normal period of time for editors to have a paper with no communication with the authors?

Additionally, this Discussion does not concern novel or new research, but is simply a paper pointing out serious and clear errors in a paper published by the JEM in January 2011, which one would think the JEM would want to correct and clarify.

Sincerely,

Tony Szamboti

----- Original Message -----

From: "ASCE Journal-Submissions1" [REDACTED]
To: "Tony Szamboti" [REDACTED]
Sent: Monday, September 26, 2011 10:43 AM
Subject: RE: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

Dear Tony Szamboti,

At this time your submission is under review. I have sent a reminder to the handling editor regarding your submission and completion time.

Sincerely,
Jennifer Parresol
ASCE

-----Original Message-----

From: Tony Szamboti [REDACTED]
Sent: Sunday, September 25, 2011 10:52 PM
To: ASCE Journal-Submissions1
Subject: Re: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

Jennifer,

The manuscript number of our Discussion is EMENG-1013.

Tony Szamboti

----- Original Message -----

From: "Tony Szamboti" [REDACTED]
To: "ASCE Journal-Submissions1" [REDACTED]
Cc: "Richard Johns" [REDACTED]
Sent: Saturday, September 24, 2011 2:46 PM
Subject: Re: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

> Jennifer,
>
> It has now been more than sixteen weeks since our Discussion paper,
> referenced below, was sent to a JEM editor. We have not heard anything

> from the Journal in the intervening time, except for your brief reply
> below of July 18. We are concerned about the time that has elapsed,
> and
> request that you notify the editor of our concern. We hope to hear
> from
> you soon.

>
>
> Ref.: Discussion of "Why the Observed Motion History of World Trade
> Center Towers is Smooth"
> By Ja-Liang Le and Zdenek Bazant
> DOI: 10.1061/_ASCE_EM.1943-7889.0000198
> Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011,
> pg.
> 82-84
> Authors: Tony Szamboti and Richard Johns

>
> Sincerely,
>
> Tony Szamboti

> ----- Original Message -----

> From: "ASCE Journal-Submissions1" [REDACTED]
> To: "Anthony Szamboti" [REDACTED]
> Sent: Monday, July 18, 2011 7:40 AM
> Subject: RE: Query concerning Discussion of "Why the Observed Motion
> History of World Trade Center Towers is Smooth"

>
>
> Dear Anthony Szamboti,
>
> At this time the submission of your Discussion is under review. Once
> they
> send me the decision I can then send it onto you.

>
> Sincerely,
>
> Jennifer Parresol
> Editorial Coordinator
> ASCE
> 1801 Alexander Bell Drive
> Reston, VA 20191

> [REDACTED]
>
> _____

> From: [REDACTED] on behalf of
> Anthony Szamboti
> Sent: Sat 7/16/2011 6:01 PM

11/20/2017

Gmail - Re: Query concerning Discussion of "Why the Observed Motion History of World Trade Center Towers is Smooth"

> To: ASCE Journal-Submissions1
> Subject: Query concerning Discussion of "Why the Observed Motion
History
> of World Trade Center Towers is Smooth"
>
>
>
> CC: [REDACTED]
>
> Ref.: Discussion of "Why the Observed Motion History of World Trade
> Center Towers is Smooth"
> By Ja-Liang Le and Zdenek Bazant
> DOI: 10.1061/_ASCE_EM.1943-7889.0000198
> Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011,
pg.
> 82-84
>
> Authors: Tony Szamboti and Richard Johns
>
>
> Dear Sir or Madam,
>
> It has been more than six weeks since our Discussion paper, referenced

> above, was sent to a JEM editor. As we have not heard anything from
the
> Journal in the intervening time, we are curious to know when we can
expect
> the Discussion to be published.
>
> Sincerely,
>
> Tony Szamboti
>

Exhibit D



Richard Johns [REDACTED]

Decision on Manuscript MS EMENG-1013

Journal of Engineering Mechanics [REDACTED]

31 May 2012 at 11:40

To: [REDACTED]

You are being carbon copied ("cc:'d") on an e-mail "To" "Anthony Szamboti" [REDACTED]

CC: [REDACTED]

Ref.: Ms. No. EMENG-1013

Reply and discussion of the paper Why the Observed Motion History of World Trade Center Towers is Smooth By Ja-Liang Le and Zdenek Bazant DOI: 10.1061/_ASCE_EM.1943-7889.0000198 Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

Anthony Szamboti, BSME; Richard Johns, PhD

Dear Mr. Szamboti,

Your Discussion, listed above, has completed the peer-review process for possible publication in ASCE's Journal of Engineering Mechanics. The editor's final decision was to decline the manuscript.

For your guidance, you will find below the reviewer's comments identifying those elements of the manuscript that prevent its acceptance by the Journal.

We realize that it takes a great deal of time and effort to prepare a paper for submission and we thank you for choosing the Journal of Engineering Mechanics for submission of your work

Sincerely,

Jennifer Parresol

Reviewers' comments:

AE: On the basis of the enclosed review, the paper is declined for the lack of substantive arguments in terms the underpinning (e.g. tower velocity) calculations.

Reviewer #2: The Jan 2011 technical note (TN) by Le and Bazant discussed how the upper portion of the WTC towers fell and impacted the remaining building section below, with a focus on the mechanics used to determine the velocity of the upper portion as it impacted the section below and the effect of degradation on the velocity. The change in velocity at impact was shown to be too small to detect on available videos. This paper builds on a series of papers in the Journal of Engineering Mechanics, and the entire sequence of papers needs to be considered by the discussion authors.

The discussion paper by Szamboti and Johns asserts that the input values used for the calculations of velocity were incorrect. Therefore, the levels of computed deceleration at impact and acceleration following impact are thought to be incorrect.

However, as noted below, the authors have not successfully demonstrated their concerns because they have not accurately represented the work by Le and Bazant or presented the basis for the input values they feel are correct.

The reviewer has the following comments about the discussion paper:

2. Inertia Resistance

The authors stated that the reasons for only using the concrete mass are not stated. However, Le and Bazant reference their 2008 paper for the source of values used, and the authors go on to use values from that paper. Le and Bazant (2008) define m_c as the "mass of one floor slab". A floor slab is terminology often used to refer to the constructed floor, not just the concrete.

The authors use the m_2 value defined by Le and Bazant as "mass of a single story", which includes the steel columns and floor slab, in a mass ratio of the upper section mass (M) to $(M+m_2)$. $M/(M+m_2)$ cannot be equated to the velocity reduction in equation 2 in the TN.

The authors statement below is incorrect:

"The velocity lost is therefore about 7% of the original, rather than the 1.1% claimed. (Note that this is already more than the 3% total loss calculated by Le and Bazant.)"

The 1.1% velocity reduction by Le and Bazant was based on rigid mass interactions in equation 2, and the 3% velocity reduction was based on deformation and interaction of both masses in equation 11.

3. Column Resistance

The authors state:

"The 287 columns on the 97th story are treated by Le and Bazant as identical, even though the 47 core columns were on average much stockier than the 240 perimeter columns. The data used for a single column seem to be describing a perimeter column (stated in NIST NCSTAR 1-3D, p. 4 to be 14" square box columns) since the value $M_p = 0.32$ MNm may be obtained for a 14" square box column with wall thickness 6.75mm, or 0.27", according to the usual formula:

$$M_p = 1.5 \times b_2t \times F_y$$

(b is the breadth of each flange, t is the flange thickness, and F_y is the yield stress, assumed by Le and Bazant to be 0.248 GN/m²)."

The column data used by Le and Bazant was representative section for all of the core and perimeter columns, as described in Le and Bazant (2008) under Variation of Mass and Buckling Resistance Along Height section.

The plastic moment, $M_p=0.32$ MNm is the "average yield bending moment of one column" for "n=287 columns (approximately considered as identical)". Identical does not imply that they are all perimeter box columns.

Further, it is not clear what $1.5 \times b_2t \times F_y$ represents in the M_p equation, as it is not an expression for the plastic modulus of either a hollow box section or a wide-flange section about the plastic neutral axis. The authors need to give a source for the equation.

Given the comments above, the 'first error' cited by the authors as an incorrect total cross-sectional column area for a floor is not persuasive. Le and Bazant used a representative section (noted above) and there is no basis for the author's assertion that $A= 4$ m².

The noted 'second error' of the F_y value could not be verified.

"The authors' second error is to use a value of $F_y = 0.248$ GN/m² (36 ksi) for the yield stress of the columns".

I did not find it in the 2011 technical note, or in the other papers by Le and Bazant. Le and Bazant did account for varying F_y of the columns in their representative section.

For the calculation of M_p , I looked at the referenced MacQueen and Szamboti (2009), which listed column F_y and dimensions for core columns, but did not list any plastic moment values. Given the M_p equation above, the values listed for are suspect.

The authors computed a total yield load for

"First the 240 perimeter columns: $P = 240 \times 0.00675 \times 4 \times 0.3556 \times 0.45 \times 109 = 1.04$ GN."

Equations need to be presented with defined variables, and then followed by values is desired. It is not clear what 0.3556 represents, and the area of the perimeter columns included flange sections that extended beyond the 'box' section, which is not discussed or included in the calculations. Based on these points, the values listed for the core columns are also suspect, as insufficient basis for the values presented are provided.

The authors use the unsubstantiated values from above in an equation from Le and Bazant (2002) that computes plastic axial load F_b or a given axial shortening u .

The input values for the equation include a core column length of 3.7 m and a perimeter column length of 2.3 m. Clearly,

column lengths must all be the same on a given story - the spandrel plates were attached to the columns but did not act as columns. Thus, Figure 1 is incorrect.

The authors go on to estimate their own value of the mass of the upper descending portion of the tower, simply based on floor densities from other high-rise buildings. While that information is interesting, it is not sufficient to claim that the correct value is 2.75 Mkg per story.

4. Calculating the velocity curve.

Given the concerns about the values for mass and column properties, the velocity computations in this section are suspect. The basis of the computed velocity curves for the 33 and 54 Mkg masses are not described. Note that in Figure 2 that the 33 Mkg mass has a zero velocity at approx. 3.2 s, well before the collapse is completed.

Exhibit E



Richard Johns [REDACTED]

Fw: Appeal of decision on Ms. No. EMENG-1013

Tony Szamboti [REDACTED]

7 June 2012 at 17:44

To: [REDACTED]

Richard,

I sent the letter and rebuttal to the address you provided.

I gave the letter and rebuttal titles connecting them to the manuscript and made PDF files out of both to send. That way there is much less chance of meddling by anyone.

I added my address and changed one word in the document. It was at the bottom of page 5 where we were talking about "yield load" but it had "yield strength" in there.

I think it is a very convincing argument and the summary at the end really reinforces it. You did a very good job here. I hope we are treated fairly. We will see.

Tony

From: Tony Szamboti**Sent:** Thursday, June 07, 2012 8:37 PM**To:** [REDACTED]**Subject:** Appeal of decision on Ms. No. EMENG-1013

Dear sir or madam editor,

Attached please find a Letter of Appeal concerning the recent decision on Ms. No. EMENG-1013, and a Rebuttal to the comments by Reviewer #2 which we were told were the basis for the decision.

If there is anything additional you require in the appeal process please let us know.

Sincerely,

Anthony Szamboti
Blackwood, NJ

2 attachments**Letter of Appeal of decision on Ms. No. EMENG-1013.pdf**

14K

**Rebuttal to Reviewer comments used in the decision on Ms. No. EMENG-1013.pdf**

97K

Anthony Szamboti

████████████████████
████████████████████
June 7, 2012

Director, Journals
ASCE
1801 Alexander Bell Drive
Reston, VA 20191-4400

Dear Sir or Madam,

We recently received notice that our discussion paper (Ms. No. EMENG-1013), submitted to the *Journal of Engineering Mechanics* in May 2011 and referred to an editor on June 2, 2011, has been declined. However, comments of Reviewer #2, upon which this decision was based, contain serious errors that are easy to identify. In fact none of the reviewer's criticisms are justified, apart from some requests for clarification that are easily met.

We provide a detailed rebuttal of the reviewer's comments in the included document. In view of the magnitude and importance of the errors we have found in the technical note we discuss, our discussion should surely be published. We propose therefore that you either accept the manuscript as it is, or allow us to revise the manuscript slightly to satisfy the reviewer's requests for clarification.

We are also curious to see any comments that Reviewer #1 may have provided about our paper. Can these be forwarded to us?

Sincerely,

Anthony Szamboti

Richard Johns

Rebuttal to Criticisms of Reviewer #2

Richard Johns
Anthony Szamboti

June 7, 2012

The full text of the reviewer's comments, as provided to us over email, including quotations from our discussion, are shown below in 10-point Arial font, indented. Our responses are in Times font.

Reviewers' comments:

AE: On the basis of the enclosed review, the paper is declined for the lack of substantive arguments in terms the underpinning (e.g. tower velocity) calculations.

Reviewer #2: The Jan 2011 technical note (TN) by Le and Bazant discussed how the upper portion of the WTC towers fell and impacted the remaining building section below, with a focus on the mechanics used to determine the velocity of the upper portion as it impacted the section below and the effect of degradation on the velocity. The change in velocity at impact was shown to be too small to detect on available videos. This paper builds on a series of papers in the Journal of Engineering Mechanics, and the entire sequence of papers needs to be considered by the discussion authors.

The discussion paper by Szamboti and Johns asserts that the input values used for the calculations of velocity were incorrect. Therefore, the levels of computed deceleration at impact and acceleration following impact are thought to be incorrect.

However, as noted below, the authors have not successfully demonstrated their concerns because they have not accurately represented the work by Le and Bazant or presented the basis for the input values they feel are correct.

The reviewer has the following comments about the discussion paper:

2. Inertia Resistance

The authors stated that the reasons for only using the concrete mass are not stated. However, Le and Bazant reference their 2008 paper for the source of values used, and the authors go on to use values from that paper. Le and Bazant (2008) define m_c as the "mass of one floor slab". A floor slab is terminology often used to refer to the constructed floor, not just the concrete.

Response: No doubt the term 'floor slab' is sometimes used this way, but not in this case. The mass used by Le and Bazant, 0.627 Mkg, cannot be the mass of the entire constructed floor, since the latter (including the live load) is at least 2 Mkg. A very rough calculation of the mass

of a lightweight concrete slab, 11cm thick, and roughly 60 by 60 metres, density 1750 kg/m^3 , is about 0.7 Mkg. Of course there was no floor in much of the building core, which no doubt accounts for the small difference between this value and Le and Bazant's.

The authors use the m_2 value defined by Le and Bazant as "mass of a single story", which includes the steel columns and floor slab, in a mass ratio of the upper section mass (M) to $(M+m_2)$. $M/(M+m_2)$ cannot be equated to the velocity reduction in equation 2 in the TN.

The authors statement below is incorrect:

"The velocity lost is therefore about 7% of the original, rather than the 1.1% claimed. (Note that this is already more than the 3% total loss calculated by Le and Bazant.)"

The 1.1% velocity reduction by Le and Bazant was based on rigid mass interactions in equation 2, and the 3% velocity reduction was based on deformation and interaction of both masses in equation 11.

This criticism is baffling to us. Our velocity reduction calculation, based on the inertia of floor 97, does not depend on the floor being rigid. It is simple Newtonian physics. When a body of mass $14m$ strikes a stationary one of mass m , and they stick together, the resulting body has mass $15m$ and has $14/15 = 0.93$ of the original velocity. This follows from the conservation of linear momentum, which applies to all collisions, regardless of the rigidity of the bodies involved. If the bodies are compressible, then the velocity reduction is spread over a longer time interval, but the size of the reduction is unaffected. We can see no reason at all to suppose that only the concrete slab would be accelerated by the impact, rather than the whole floor assembly. Neither Le and Bazant nor Referee #2 has supplied such a reason.

3. Column Resistance

The authors state:

"The 287 columns on the 97th story are treated by Le and Bazant as identical, even though the 47 core columns were on average much stockier than the 240 perimeter columns. The data used for a single column seem to be describing a perimeter column (stated in NIST NCSTAR 1-3D, p. 4 to be 14" square box columns) since the value $M_p = 0.32 \text{ MNm}$ may be obtained for a 14" square box column with wall thickness 6.75mm, or 0.27", according to the usual formula:

$$M_p = 1.5 \times b \times t^2 \times F_y$$

(b is the breadth of each flange, t is the flange thickness, and F_y is the yield stress, assumed by Le and Bazant to be 0.248 GN/m^2 .)"

The column data used by Le and Bazant was representative section for all of the core and

perimeter columns, as described in Le and Bazant (2008) under Variation of Mass and Buckling Resistance Along Height section.

The section referred to does contain some information about the columns, but it does not describe any single column spec that is representative for the columns between floors 97 and 98. Interestingly, it does give 10mm as the web thickness for the perimeter columns on the aircraft impact level. Using 10mm with the other parameters (breadth 0.3556m and yield stress 250 MPa) gives $M_p = 0.448$ MNm rather than 0.32 MNm, so it could not have been used in Le and Bazant (2011). In our opinion, Le and Bazant's TN should have stated clearly, in the paper itself, their assumed specs for the columns on story 97. As it is, we are forced to guess these specs, based on the few numbers they do supply, such as the plastic moment.

The plastic moment, $M_p=0.32$ MNm is the "average yield bending moment of one column" for "n=287 columns (approximately considered as identical)". Identical does not imply that they are all perimeter box columns.

Further, it is not clear what $1.5 \times b2t \times F_y$ represents in the M_p equation, as it is not an expression for the plastic modulus of either a hollow box section or a wide-flange section about the plastic neutral axis. The authors need to give a source for the equation.

Our equation for M_p is a simplified version of the one given in:

Gaylord E. H. and Gaylord C. N. (1979) *Structural Engineering Handbook*, McGraw-Hill.

On page 7-3 the plastic section modulus is given for a hollow rectangular section with external dimensions $b \times d$, and flange/web thicknesses t and w as:

$$Z_p = \frac{bd^2}{4} \left(1 - \left(1 - \frac{2w}{b} \right) \left(1 - \frac{2t}{d} \right)^2 \right)$$

For a hollow square section, with equal flange and web thicknesses, we put $d = b$ and $w = t$ to get:

$$Z_p = \frac{b^3}{4} \left(1 - \left(1 - \frac{2t}{b} \right)^3 \right)$$

We then derived a simplified formula for thin-walled sections where $t \ll b$. Multiplying out the brackets and dropping terms containing t^2 and higher orders, one obtains:

$$Z_p \approx \frac{3}{2} b^2 t$$

When this is multiplied by F_y it gives the formula for M_p stated in our discussion. No doubt the use of the simplified formula was a stumbling block to the reviewer, and it also gives slightly different M_p values from the exact one. We would be happy to use the exact formula instead.

Given the comments above, the 'first error' cited by the authors as an incorrect total cross-sectional column area for a floor is not persuasive. Le and Bazant used a representative section (noted above) and there is no basis for the author's assertion that $A = 4 \text{ m}^2$.

The value $A = 4 \text{ m}^2$ is obtained by adding 2.3 m^2 (perimeter) to 1.7 m^2 for the core. The total cross sectional area for the (roughly square) perimeter columns was calculated as 240 (columns) x 4 x 0.3556m (breadth) x 0.00675m (thickness). The total cross sectional area for the core columns was obtained by adding the cross sectional area for each core column, as given in the NIST SAP2000 model data.

The noted 'second error' of the F_y value could not be verified.

"The authors' second error is to use a value of $F_y = 0.248 \text{ GN/m}^2$ (36 ksi) for the yield stress of the columns".

I did not find it in the 2011 technical note, or in the other papers by Le and Bazant. Le and Bazant did account for varying F_y of the columns in their representative section.

Le and Bazant did indeed use $F_y = 250 \text{ MPa}$, i.e. 0.25 GN/m^2 . While it is not explicitly stated in their 2011 paper, it can be calculated from their Equation (3). They call it σ_0 , and it equals $(1.513 \times 10^9)/6.05 = 0.25 \times 10^9$. Bazant and Le also give this value explicitly in their 2008 closure to G. Szuladzinski's discussion (JEM 2008, p. 921).

For the calculation of M_p , I looked at the referenced MacQueen and Szamboti (2009), which listed column F_y and dimensions for core columns, but did not list any plastic moment values. Given the M_p equation above, the values listed for are suspect.

It is disappointing that the reviewer finds our M_p values to be "suspect" without actually checking any of them. All the necessary data to do so are provided in the supplied MacQueen and Szamboti reference. Each flange has plastic section modulus $t.b^2/4$, so the total is $t.b^2/2$ for the two flanges. (Here we neglected the small contribution from the web, i.e. $\frac{1}{4}(d - 2t)w^2$, where $d - 2t$ is the web length and w the thickness. The full formula is given in Gaylord and Gaylord text referenced above, p. 7-3.)

In our discussion we stated the M_p values calculated using this formula for the largest and smallest core columns. For example, the largest type of core column on this story has $b =$

16.695" = 0.424m, and $t = 3.033" = 0.077m$, and has a 42 ksi (290 MPa) yield stress. We then have

$$M_p = (0.077 \times 0.424^2 \times 290 \times 10^6)/2 = 2.01 \text{ MNm},$$

exactly as stated in our discussion. We calculated the M_p values in the same way for all of the 47 core columns using a spreadsheet, and found the average to be 0.75 MNm. If anyone doubts this figure they are welcome to calculate it for themselves. We can also provide our Excel file, upon request.

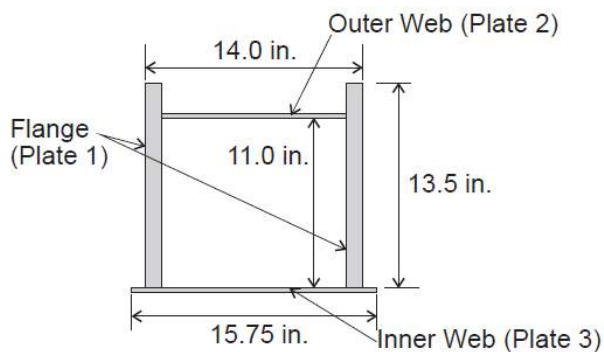
The authors computed a total yield load for

"First the 240 perimeter columns: $P = 240 \times 0.00675 \times 4 \times 0.3556 \times 0.45 \times 10^9 = 1.04 \text{ GN}.$ "

Equations need to be presented with defined variables, and then followed by values is desired. It is not clear what 0.3556 represents, and the area of the perimeter columns included flange sections that extended beyond the 'box' section, which is not discussed or included in the calculations. Based on these points, the values listed for the core columns are also suspect, as insufficient basis for the values presented are provided.

We think this calculation is clear enough, but it would be easy to add the explanation that 0.3556m is the breadth of a perimeter column, and 0.00675m the flange thickness, so that $0.00675 \times 4 \times 0.3556$ is the cross-sectional area of one column. Multiplying by the yield stress $0.45 \times 10^9 \text{ N}$ and the number of perimeter columns (240) gives the total yield load for the perimeter columns on the 97th story.

The appeal to extended flange sections, to account for Le and Bazant's very high area value, is grasping at straws. The figure below is part of Fig. 2-3 on p. 7 of NIST NCSTAR 1-3A, and shows that the total XS length of the flanges and webs is $13.5" \times 2 + 14" + 15.75" = 56.75"$. Hence our value of $14 \times 4 = 56"$ is admittedly too low, but only by about 1.3%, which is not significant.



The authors use the unsubstantiated values from above in an equation from Le and Bazant (2002) that computes plastic axial load F_b or a given axial shortening u .

The input values for the equation include a core column length of 3.7 m and a perimeter column length of 2.3 m. Clearly, column lengths must all be the same on a given story - the spandrel plates were attached to the columns but did not act as columns. Thus, Figure 1 is incorrect.

The length of concern is the unsupported column length and it is different between the columns in the core and those on the perimeter due to the depth of the beams involved. In taking 2.3m as the unsupported length of a perimeter column we are following Bazant and Zhou (2002), p. 5, except that we measured the spandrel height to be 1.4m rather than 1.2m. This can be changed without drastically affecting the results.

The authors go on to estimate their own value of the mass of the upper descending portion of the tower, simply based on floor densities from other high-rise buildings. While that information is interesting, it is not sufficient to claim that the correct value is 2.75 Mkg per story.

In our discussion paper we actually refer to a detailed analysis by G. Urich, which is based on the NIST reports' description of the floor structures, total steel weight found in contracts, and live and superimposed dead loads. We do not argue solely by comparison with the Sears Tower and John Hancock building, although that provides additional evidence. Moreover, we recently found that NIST NCSTAR 1-6D, p. 176, Table 4-7, directly states the actual total load on the columns between floors 98 and 99 to be 73,143 kips, i.e. roughly 33 Mkg. With the collapse initiating on the 98th floor, as referenced in NIST NCSTAR 1-6, p. 156, the falling upper section mass would be roughly 33 Mkg, as stated in our discussion. There are many separate lines of evidence leading to mass estimates in this range, while Le and Bazant provide no justification at all for their much-higher estimate. Hence our criticism is well supported and very reasonable.

4. Calculating the velocity curve.

Given the concerns about the values for mass and column properties, the velocity computations in this section are suspect. The basis of the computed velocity curves for the 33 and 54 Mkg masses are not described. Note that in Figure 2 that the 33 Mkg mass has a zero velocity at approx. 3.2 s, well before the collapse is completed.

All the necessary input values are given, so that anyone can calculate their own curves to verify ours. We would be happy to provide hand calculations that give approximately the same results as the curves shown, which were produced numerically. We were not able to include such calculations in the original discussion, since we had reached the upper word limit.

In summary, *Reviewer #2 has not found any error at all* in our criticisms of Le and Bazant's TN. We have correctly cited the TN itself, as well as Bazant's earlier papers on the subject, and the NIST reports. Our criticisms, summarised below, are therefore still valid.

1. Le and Bazant do not adequately state their assumed specifications for the columns on story 97.
2. The values they do state, i.e. average $M_p = 0.32$ MNm and total XS area 6.05 m², are unsupported by any references or calculations, and *not even consistent with one another*, given the known number and external dimensions of the columns, their own value for the yield stress, and the standard textbook formula for M_p .
3. In calculating the momentum exchange between the falling upper block and the first stationary floor, Le and Bazant have incorrectly used the mass of the concrete slab only, rather than the full floor assembly.
4. Le and Bazant's mass value of 54.18 Mkg for floors 99-110 (plus the roof) is unsupported by any evidence, and is much greater than the 33 Mkg value given by NIST.
5. Le and Bazant's average value for the yield stress of the columns on story 97 contradicts the yield stresses provided by NIST.
6. With all these corrected data the value of u_{eq} , i.e. the downward displacement at which the resistive and gravitational forces balance, is roughly 1.12 m, not the 0.065 m they claim.
7. Using the corrected data, Le and Bazant's own methods predict a velocity reduction that would be visible in a velocity plot derived from Etienne Sauret's high-definition video footage of WTC 1. (Our discussion paper, unlike the TN, includes this necessary empirical data, and no such reduction is visible.) The conclusion of Le and Bazant's TN is not supported by the available evidence.

Exhibit F



Richard Johns [REDACTED]

Revise for Editor Only

Journal of Engineering Mechanics [REDACTED]

13 June 2012 at 11:04

To: [REDACTED]

You are being carbon copied ("cc:'d") on an e-mail "To" "Anthony Szamboti" [REDACTED]

CC: [REDACTED]

Ref.: Ms. No. EMENG-1410
Appeal of decision on Ms. No. EMENG-1013
Anthony Szamboti, BSME; Richard Johns, PhD

Dear Mr. Szamboti,

Your Discussion, listed above, has completed a review for publication in ASCE's Journal of Engineering Mechanics. The editor has requested that minor revisions be made based on the reviewers' evaluations (shown at the end of this email) and submitted for re-review by 06-28-2012. This revision will only be seen again by the editor and will not undergo the entire review process.

Please submit the revised manuscript and a detailed response to the reviewers' criticisms by logging onto the Editorial Management system at <http://jrnemeng.edmgr.com/> and clicking on the "Submissions Needing Revision".

Be advised that the editor may request further revision or decline your revised version if all of the reviewers' comments have not been adequately addressed.

Comments from the Editor and Reviewers can be found below.

We look forward to receiving your revised manuscript.

Sincerely,

Holly Koppel
Publishing Manager

Reviewers' comments:

Thank you for your appeal. There were no reviews from Reviewer 1, this reviewer was un-assigned after failure to submit the review.

Please upload your appeal as your "Cover Letter" and submit your Discussion text as the manuscript for review.

Exhibit G



Richard Johns [REDACTED]

Revised submission confirmation

Journal of Engineering Mechanics [REDACTED]

19 June 2012 at 19:19

To: [REDACTED]

You are being carbon copied ("cc:'d") on an e-mail "To" "Anthony Szamboti" [REDACTED]

CC: [REDACTED]

Ref.: Ms. No. EMENG-1410R1

Discussion

Dear Mr. Szamboti,

Your revised manuscript, listed above, has been received by the Journal of Engineering Mechanics.

You may check the status of your manuscript by logging onto the editorial management system at <http://jrnemeng.edmgr.com/>

Sincerely,

Journal of Engineering Mechanics

Journal of Engineering Mechanics
Appeal of decision on Ms. No. EMENG-1013
--Manuscript Draft--

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Corresponding Author:	Anthony Szamboti, BSME None [REDACTED]
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Anthony Szamboti

June 7, 2012

Director, Journals
ASCE
1801 Alexander Bell Drive
Reston, VA 20191-4400

Dear Sir or Madam,

We recently received notice that our discussion paper (Ms. No. EMENG-1013), submitted to the *Journal of Engineering Mechanics* in May 2011 and referred to an editor on June 2, 2011, has been declined. However, comments of Reviewer #2, upon which this decision was based, contain serious errors that are easy to identify. In fact none of the reviewer's criticisms are justified, apart from some requests for clarification that are easily met.

We provide a detailed rebuttal of the reviewer's comments in the included document. In view of the magnitude and importance of the errors we have found in the technical note we discuss, our discussion should surely be published. We propose therefore that you either accept the manuscript as it is, or allow us to revise the manuscript slightly to satisfy the reviewer's requests for clarification.

We are also curious to see any comments that Reviewer #1 may have provided about our paper. Can these be forwarded to us?

Sincerely,

Anthony Szamboti

Richard Johns

1 Discussion of the paper

2 **Why the Observed Motion History of World Trade Center Towers is Smooth**

3 By Ja-Liang Le and Zdeněk Bažant

4 DOI: 10.1061/_ASCE_EM.1943-7889.0000198

5 *Journal of Engineering Mechanics*, Vol. 137, No. 1, January 1, 2011, pg. 82-84

6

7 Tony Szamboti

8 Richard Johns

9

10 **1. Introduction**

11

12 In their paper, Le and Bažant respond to the claim that the motion of the roofline of WTC 1, as captured in
13 video footage, is inconsistent with the hypothesis of gravity-driven progressive collapse. Unfortunately
14 they do not give any sources for this claim, but it is likely that they are responding to the work of Chandler
15 (2010) and MacQueen and Szamboti (2009).

16

17 It is agreed on all sides that the collapse of WTC 1 initiated at the 98th floor leaving a 12-story upper part
18 to fall onto a stationary 97-story lower part, as stated by NIST NCSTAR 1-6, p. 156. Le and Bažant
19 calculate the total velocity reduction after impact to be about 3%. They also find that, after impact, the
20 upper part continues to accelerate downwards at 6.2 m/s^2 . It seems these calculations are based on
21 assumptions, especially regarding the steel columns on story 97, which are without justification and
22 contradicted by NIST.

23

24 **2. Inertia Resistance**

25

26 Le and Bažant first calculate the slowing of the upper portion due to the inertia of the first story impacted.

27 For reasons that are not specified, they consider only the mass of the concrete floor slab to be involved in

28 this exchange of momentum. They calculate the effect of a descending mass of 54.18 Mkg striking a

29 stationary mass of 0.627 Mkg. However, the concrete floor slab is only part of the overall floor mass,

30 which also includes rebar, steel decking, trusswork, and the live load. According to Bažant and Le (2008,

31 p. 905), from which Le and Bažant obtain the data used, m_2 = the mass of a single story is 3.87 Mkg for

32 WTC 1. Using this value, we get a velocity ratio of $54.18/(54.18 + 3.87) = 0.93$. The velocity lost is

33 therefore about 7% of the original, rather than the 1.1% claimed. (Note that this is already more than the

34 3% *total* loss, calculated by Le and Bažant.)

35

36

37 **3. Column resistance**

38 For simplicity, Le and Bažant's calculations assume that the 287 columns on the 97th story are identical.

39 Unfortunately, the full specifications of this representative column are not stated. We are told that the

40 plastic moment M_p for this column is 0.32 MNm, and from Equation (3) we can infer that the yield stress

41 $\sigma_0 = 250$ MPa. The total cross-sectional area of the 287 columns is stated to be 6.05 m². The shape of the

42 column, its overall dimensions, and flange and web thicknesses are not given. We can find no

43 specification consistent with this data.

44 Most of the columns (240 of the 287) were perimeter columns, the overall dimensions and shape of which

45 are stated by NIST (NCSTAR 1-3D, p. 4) to be approximately 14" square box columns, i.e. having width and

46 breadth equal to 0.3556 m. To calculate M_p we used a standard formula for the plastic section modulus of

47 a hollow rectangular section (see Gaylord et al, 1979, 7-3), putting width equal to breadth b , web

48 thickness equal to flange thickness t , and multiplying by the yield stress, gives:

49
$$M_p = \frac{b^3}{4} \left(1 - \left(1 - \frac{2t}{b} \right)^3 \right) \sigma_0. \quad (1)$$

50 Calculating backwards (from $M_p=0.32$ MNm) gives $t = 7.02$ mm. This is much less than the 10 mm
51 thickness given in Bažant and Le (2008, p. 896) for the aircraft impact level, and even a little less than the
52 7.5 mm they state for the top story. It also entails a total cross-sectional area of $287 \times 4 \times 0.3556 \times$
53 $0.00702 = 2.87 \text{ m}^2$, which is less than half of the 6.05 m^2 stated. The authors need to explain how their M_p
54 value was obtained.

55 Our estimate of the average plastic moment of the columns on story 97 is 0.64 MNm, obtained as follows.
56 For the perimeter columns, we conservatively assume web and flange thicknesses $t = 7.5$ mm. The yield
57 stress of the perimeter columns at story 97 is reported by NIST to be 55ksi – 100ksi (NCSTAR 1-6, p. 61,
58 and NCSTAR 1-3B, Table 4-2, p. 52). We estimate the average yield stress to be 65ksi, i.e. 450 MPa, which
59 is also conservative, since NIST reports the measured yield stresses to be above nominal. (NCSTAR 1-6, p.
60 61). This gives $M_p = 0.61$ MNm for the perimeter columns.

61
62 The core columns vary in size and steel types. They are wide-flange columns, with flanges ranging from
63 16.695" x 3.033" down to 8" x 0.528", and either 36, 42, 45, or 50 ksi yield strength. (See the available
64 NIST SAP2000 model data, reproduced by MacQueen and Szamboti (2009), pp. 22-3.) To calculate M_p for
65 the weak axis, the plastic section modulus $Z_p = \frac{1}{2} t \cdot b^2$, also obtained from Gaylord et al (1972, 7-3), was
66 used, omitting the small contribution from the web. The M_p values for core columns were found to range
67 from 2.01 MNm to 0.09 MNm, the average being 0.75 MNm. The weighted average, for core and
68 perimeter columns, is then 0.64 MNm. We conclude that 0.32 MNm is much too low.

69
70 Using this corrected M_p value, together with the other column data stated above, we can repeat Le and
71 Bažant's calculations for the velocity reduction of the upper part of WTC 1. First we calculate the total
72 yield load for all columns. For the 240 perimeter columns: $P = 240 \times 4bt\sigma_0 = 1,150$ MN. For the core,

73 using the NIST data, the total cross-sectional area of the core columns is found to be 1.69 m², and
74 maximum load is 460 MN. In total, we have $P = 1,610$ MN.

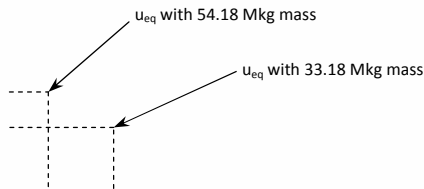
75
76 For calculating the load-displacement curve we also need the column length L , given by Le and Bažant as
77 3.7 m for all the columns. Bažant and Zhou (2002, p. 5) state the effective height of the perimeter
78 columns to be 2.5 m, the distance between the 1.32 m deep spandrel plates, that were heavier gauge
79 than the adjacent column webs. (See NIST NCSTAR 1-3A, pp. 7-9.) Since our aim is to calculate a
80 conservative estimate of the velocity drop, however, we will ignore the spandrel plates and use $L = 3.7$ m
81 – which makes the perimeter columns more slender, substantially reducing their resistance during
82 buckling. The resistive force F_b is then given by the formula below (see Bažant and Zhou 2002, p. 6) where
83 number of columns is n , and u the reduction in column length.

84

$$F_b = \frac{4nM_p}{L\sqrt{1 - \left[1 - \left(\frac{u}{L}\right)^2\right]^2}} \quad (2)$$

85

86 Using $M_p = 0.64$ MNm we get the graph shown in Fig. 1.



87

88 Fig. 1. Diagram of load vs. displacement during axial deformation and buckling

89

90 The average resistance of the columns is 310 MN, using numerical integration. The displacement u_{eq} , at
91 which column resistance equals the 530 MN weight of the upper part (i.e. the 54.18 Mkg mass used by Le
92 and Bažant) is 0.27 m, rather than the 0.065 m claimed.

93
94 Up to this point we have used Le and Bažant's mass value of 54.18 Mkg for the upper part of the tower,
95 but this conflicts with the NIST report (NCSTAR 1-6D, p. 176, Table 4-7), which states the actual total load
96 on the columns between floors 98 and 99 to be 73,143 kips, i.e. 325.4 MN or 33.18 Mkg. NIST's estimate
97 is also much closer to typical mass per square meter values for other buildings sharing this type of
98 construction, such as the Sears (now Willis) Tower and John Hancock building. For a detailed examination
99 of the masses of WTC 1 and 2 see Urich (2007).

100

101 From here on, we will use NIST's 33 Mkg figure in our calculations. For example, u_{eq} then occurs at
102 roughly 0.76 m, as shown in Fig. 1.

103

104

105 **4. Calculating the Velocity Curve**

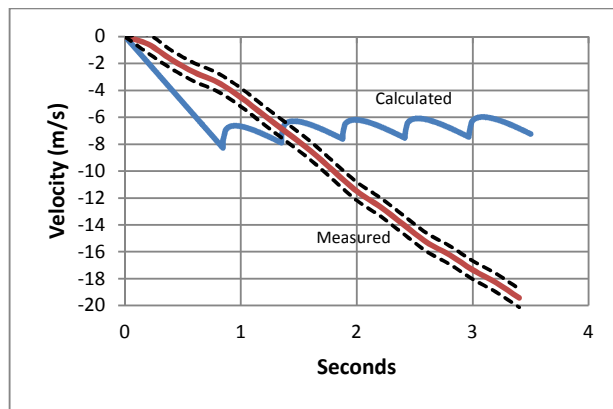
106 To verify the accuracy of the gravity-driven model, we can calculate the velocity curve for the roof line,
107 and compare it with the behavior of WTC 1 itself. Fortunately, there is high-resolution footage of the
108 collapse of WTC 1 shot by professional filmmaker Etienne Sauret, and used for the documentary film *WTC*
109 *- The First 24 Hours* (2002). Each pixel of this footage represents 0.27 m of the tower, and frame rate is 30
110 per second, allowing for accurate measurements of the motion.

111 David Chandler has analyzed this motion using Tracker, an open source video analysis tool. His graph is
112 shown below, together with a calculated velocity plot for a gravity-driven collapse.

113 The calculated velocity of the roofline was obtained numerically using the load-displacement curve shown
114 above, and scaling up linearly for lower stories, according to the increasing design load. We also assumed
115 Le and Bažant’s freefall acceleration during the collapse of the first story. Floors are treated as rigid and
116 incompressible, and assumed to stick together upon impact. The upper part of the building is modeled as
117 a rigid block, which Le and Bažant regard as a reasonable approximation.

118 It is easy to derive an approximation of this curve, using hand calculations, given the average 97th story
119 column resistance of 310 MN, which is approximately NIST’s (325.4 MN) weight for the upper part of the
120 building. Hence the average velocity is approximately constant after the first impact – decreasing slightly
121 due to the inertia of the impacted stationary floors.

122



123

124

Fig. 2. Measured and calculated velocity curves

125

126 The calculated first velocity decrease is 1.65 m/s (approximately 20%), and would be visible (if it existed)
127 in a velocity plot obtained from the Sauret video footage. Also, the predicted average acceleration after
128 impact (roughly zero) is significantly different from what was observed.

129

130

131 **5. Conclusion**

132

133 The analysis of Le and Bažant uses incorrect input values. These errors each have the effect of reducing
134 the resistance of the lower part of the building. As a result, their calculated velocity drop on impact is too
135 low, and their calculated acceleration following that drop is too high.

136

137

138 **References**

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141

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157 *9/11 Studies*, available at <http://www.journalof911studies.com>.

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Publication Title: _____

Manuscript/Chapter Title: DISCUSSION OF THE PAPER
"WHY the observed MOTION HISTORY of WORLD
TRADE CENTER TOWERS IS smooth"

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Rebuttal to Criticisms of Reviewer #2

Richard Johns
Anthony Szamboti

June 7, 2012

The full text of the reviewer's comments, as provided to us over email, including quotations from our discussion, are shown below in 10-point Arial font, indented. Our responses are in Times font.

Reviewers' comments:

AE: On the basis of the enclosed review, the paper is declined for the lack of substantive arguments in terms the underpinning (e.g. tower velocity) calculations.

Reviewer #2: The Jan 2011 technical note (TN) by Le and Bazant discussed how the upper portion of the WTC towers fell and impacted the remaining building section below, with a focus on the mechanics used to determine the velocity of the upper portion as it impacted the section below and the effect of degradation on the velocity. The change in velocity at impact was shown to be too small to detect on available videos. This paper builds on a series of papers in the Journal of Engineering Mechanics, and the entire sequence of papers needs to be considered by the discussion authors.

The discussion paper by Szamboti and Johns asserts that the input values used for the calculations of velocity were incorrect. Therefore, the levels of computed deceleration at impact and acceleration following impact are thought to be incorrect.

However, as noted below, the authors have not successfully demonstrated their concerns because they have not accurately represented the work by Le and Bazant or presented the basis for the input values they feel are correct.

The reviewer has the following comments about the discussion paper:

2. Inertia Resistance

The authors stated that the reasons for only using the concrete mass are not stated. However, Le and Bazant reference their 2008 paper for the source of values used, and the authors go on to use values from that paper. Le and Bazant (2008) define m_c as the "mass of one floor slab". A floor slab is terminology often used to refer to the constructed floor, not just the concrete.

Response: No doubt the term 'floor slab' is sometimes used this way, but not in this case. The mass used by Le and Bazant, 0.627 Mkg, cannot be the mass of the entire constructed floor, since the latter (including the live load) is at least 2 Mkg. A very rough calculation of the mass

44 of a lightweight concrete slab, 11cm thick, and roughly 60 by 60 metres, density 1750 kg/m³, is
45 about 0.7 Mkg. Of course there was no floor in much of the building core, which no doubt
46 accounts for the small difference between this value and Le and Bazant's.

47
48 The authors use the m₂ value defined by Le and Bazant as "mass of a single story", which
49 includes the steel columns and floor slab, in a mass ratio of the upper section mass (M) to
50 (M+m₂). M/(M+m₂) cannot be equated to the velocity reduction in equation 2 in the TN.

51
52 The authors statement below is incorrect:

53
54 "The velocity lost is therefore about 7% of the original, rather than the 1.1% claimed. (Note
55 that this is already more than the 3% total loss calculated by Le and Bazant.)"

56
57 The 1.1% velocity reduction by Le and Bazant was based on rigid mass interactions in
58 equation 2, and the 3% velocity reduction was based on deformation and interaction of both
59 masses in equation 11.

60
61 This criticism is baffling to us. Our velocity reduction calculation, based on the inertia of floor
62 97, does not depend on the floor being rigid. It is simple Newtonian physics. When a body of
63 mass 14*m* strikes a stationary one of mass *m*, and they stick together, the resulting body has mass
64 15*m* and has 14/15 = 0.93 of the original velocity. This follows from the conservation of linear
65 momentum, which applies to all collisions, regardless of the rigidity of the bodies involved. If
66 the bodies are compressible, then the velocity reduction is spread over a longer time interval, but
67 the size of the reduction is unaffected. We can see no reason at all to suppose that only the
68 concrete slab would be accelerated by the impact, rather than the whole floor assembly. Neither
69 Le and Bazant nor Referee #2 has supplied such a reason.

70
71 3. Column Resistance

72
73 The authors state:

74
75 "The 287 columns on the 97th story are treated by Le and Bazant as identical, even though
76 the 47 core columns were on average much stockier than the 240 perimeter columns. The
77 data used for a single column seem to be describing a perimeter column (stated in NIST
78 NCSTAR 1-3D, p. 4 to be 14" square box columns) since the value M_p = 0.32 MNm may be
79 obtained for a 14" square box column with wall thickness 6.75mm, or 0.27", according to the
80 usual formula:

81
82
$$M_p = 1.5 \times b \times t \times F_y$$

83
84 (b is the breadth of each flange, t is the flange thickness, and F_y is the yield stress, assumed
85 by Le and Bazant to be 0.248 GN/m²)."
86

87 The column data used by Le and Bazant was representative section for all of the core and

88 perimeter columns, as described in Le and Bazant (2008) under Variation of Mass and
89 Buckling Resistance Along Height section.

90

91 The section referred to does contain some information about the columns, but it does not
92 describe any single column spec that is representative for the columns between floors 97 and 98.
93 Interestingly, it does give 10mm as the web thickness for the perimeter columns on the aircraft
94 impact level. Using 10mm with the other parameters (breadth 0.3556m and yield stress 250
95 MPa) gives $M_p = 0.448$ MNm rather than 0.32 MNm, so it could not have been used in Le and
96 Bazant (2011). In our opinion, Le and Bazant's TN should have stated clearly, in the paper
97 itself, their assumed specs for the columns on story 97. As it is, we are forced to guess these
98 specs, based on the few numbers they do supply, such as the plastic moment.

99

100 The plastic moment, $M_p=0.32$ MNm is the "average yield bending moment of one column"
101 for "n=287 columns (approximately considered as identical)". Identical does not imply that
102 they are all perimeter box columns.

103

104 Further, it is not clear what $1.5 \times b \times 2t \times F_y$ represents in the M_p equation, as it is not an
105 expression for the plastic modulus of either a hollow box section or a wide-flange section
106 about the plastic neutral axis. The authors need to give a source for the equation.

107 Our equation for M_p is a simplified version of the one given in:

108 **Gaylord E. H. and Gaylord C. N. (1979) *Structural Engineering Handbook*, McGraw-Hill.**

109 On page 7-3 the plastic section modulus is given for a hollow rectangular section with external
110 dimensions $b \times d$, and flange/web thicknesses t and w as:

111

$$Z_p = \frac{bd^2}{4} \left(1 - \left(1 - \frac{2w}{b} \right) \left(1 - \frac{2t}{d} \right)^2 \right)$$

112 For a hollow square section, with equal flange and web thicknesses, we put $d = b$ and $w = t$ to
113 get:

$$Z_p = \frac{b^3}{4} \left(1 - \left(1 - \frac{2t}{b} \right)^3 \right)$$

114 We then derived a simplified formula for thin-walled sections where $t \ll b$. Multiplying out the
115 brackets and dropping terms containing t^2 and higher orders, one obtains:

$$Z_p \approx \frac{3}{2} b^2 t$$

116 When this is multiplied by F_y , it gives the formula for M_p stated in our discussion. No doubt the
117 use of the simplified formula was a stumbling block to the reviewer, and it also gives slightly
118 different M_p values from the exact one. We would be happy to use the exact formula instead.

119
120 Given the comments above, the 'first error' cited by the authors as an incorrect total cross-
121 sectional column area for a floor is not persuasive. Le and Bazant used a representative
122 section (noted above) and there is no basis for the author's assertion that $A = 4 \text{ m}^2$.
123

124 The value $A = 4 \text{ m}^2$ is obtained by adding 2.3 m^2 (perimeter) to 1.7 m^2 for the core. The total cross
125 sectional area for the (roughly square) perimeter columns was calculated as 240 (columns) x 4 x
126 0.3556m (breadth) x 0.00675m (thickness). The total cross sectional area for the core columns
127 was obtained by adding the cross sectional area for each core column, as given in the NIST
128 SAP2000 model data.

129
130 The noted 'second error' of the F_y value could not be verified.

131
132 "The authors' second error is to use a value of $F_y = 0.248 \text{ GN/m}^2$ (36 ksi) for the yield stress
133 of the columns".

134
135 I did not find it in the 2011 technical note, or in the other papers by Le and Bazant. Le and
136 Bazant did account for varying F_y of the columns in their representative section.

137

138 Le and Bazant did indeed use $F_y = 250 \text{ MPa}$, i.e. 0.25 GN/m^2 . While it is not explicitly stated in
139 their 2011 paper, it can be calculated from their Equation (3). They call it σ_0 , and it equals
140 $(1.513 \times 10^9)/6.05 = 0.25 \times 10^9$. Bazant and Le also give this value explicitly in their 2008
141 closure to G. Szuladzinski's discussion (JEM 2008, p. 921).

142
143 For the calculation of M_p , I looked at the referenced MacQueen and Szamboti (2009), which
144 listed column F_y and dimensions for core columns, but did not list any plastic moment
145 values. Given the M_p equation above, the values listed for are suspect.
146

147 It is disappointing that the reviewer finds our M_p values to be "suspect" without actually
148 checking any of them. All the necessary data to do so are provided in the supplied MacQueen
149 and Szamboti reference. Each flange has plastic section modulus $t.b^2/4$, so the total is $t.b^2/2$ for
150 the two flanges. (Here we neglected the small contribution from the web, i.e. $1/4(d - 2t)w^2$, where
151 $d - 2t$ is the web length and w the thickness. The full formula is given in Gaylord and Gaylord
152 text referenced above, p. 7-3.)

153 In our discussion we stated the M_p values calculated using this formula for the largest and
154 smallest core columns. For example, the largest type of core column on this story has $b =$

155 16.695'' = 0.424m, and $t = 3.033'' = 0.077m$, and has a 42 ksi (290 MPa) yield stress. We then
156 have

157
$$M_p = (0.077 \times 0.424^2 \times 290 \times 10^6)/2 = 2.01 \text{ MNm},$$

158 exactly as stated in our discussion. We calculated the M_p values in the same way for all of the 47
159 core columns using a spreadsheet, and found the average to be 0.75 MNm. If anyone doubts this
160 figure they are welcome to calculate it for themselves. We can also provide our Excel file, upon
161 request.

162

163 The authors computed a total yield load for

164

165 "First the 240 perimeter columns: $P = 240 \times 0.00675 \times 4 \times 0.3556 \times 0.45 \times 10^9 = 1.04 \text{ GN}.$ "

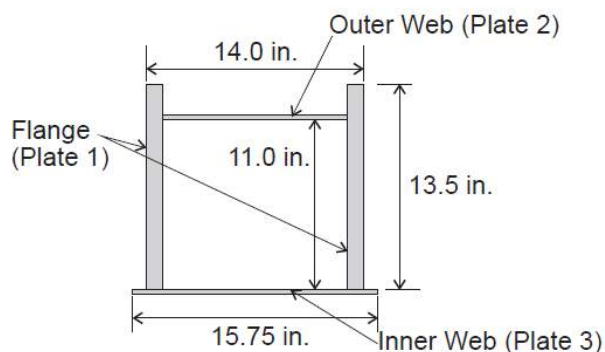
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167 Equations need to be presented with defined variables, and then followed by values is
168 desired. It is not clear what 0.3556 represents, and the area of the perimeter columns
169 included flange sections that extended beyond the 'box' section, which is not discussed or
170 included in the calculations. Based on these points, the values listed for the core columns
171 are also suspect, as insufficient basis for the values presented are provided.

172

173 We think this calculation is clear enough, but it would be easy to add the explanation that
174 0.3556m is the breadth of a perimeter column, and 0.00675m the flange thickness, so that
175 $0.00675 \times 4 \times 0.3556$ is the cross-sectional area of one column. Multiplying by the yield stress
176 $0.45 \times 10^9 \text{ N}$ and the number of perimeter columns (240) gives the total yield load for the
177 perimeter columns on the 97th story.

178 The appeal to extended flange sections, to account for Le and Bazant's very high area value, is
179 grasping at straws. The figure below is part of Fig. 2-3 on p. 7 of NIST NCSTAR 1-3A, and
180 shows that the total XS length of the flanges and webs is $13.5'' \times 2 + 14'' + 15.75'' = 56.75''$.
181 Hence our value of $14 \times 4 = 56''$ is admittedly too low, but only by about 1.3%, which is not
182 significant.



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The authors use the unsubstantiated values from above in an equation from Le and Bazant (2002) that computes plastic axial load F_b or a given axial shortening u .

The input values for the equation include a core column length of 3.7 m and a perimeter column length of 2.3 m. Clearly, column lengths must all be the same on a given story - the spandrel plates were attached to the columns but did not act as columns. Thus, Figure 1 is incorrect.

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The length of concern is the unsupported column length and it is different between the columns in the core and those on the perimeter due to the depth of the beams involved. In taking 2.3m as the unsupported length of a perimeter column we are following Bazant and Zhou (2002), p. 5, except that we measured the spandrel height to be 1.4m rather than 1.2m. This can be changed without drastically affecting the results.

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The authors go on to estimate their own value of the mass of the upper descending portion of the tower, simply based on floor densities from other high-rise buildings. While that information is interesting, it is not sufficient to claim that the correct value is 2.75 Mkg per story.

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In our discussion paper we actually refer to a detailed analysis by G. Urich, which is based on the NIST reports' description of the floor structures, total steel weight found in contracts, and live and superimposed dead loads. We do not argue solely by comparison with the Sears Tower and John Hancock building, although that provides additional evidence. Moreover, we recently found that NIST NCSTAR 1-6D, p. 176, Table 4-7, directly states the actual total load on the columns between floors 98 and 99 to be 73,143 kips, i.e. roughly 33 Mkg. With the collapse initiating on the 98th floor, as referenced in NIST NCSTAR 1-6, p. 156, the falling upper section mass would be roughly 33 Mkg, as stated in our discussion. There are many separate lines of evidence leading to mass estimates in this range, while Le and Bazant provide no justification at all for their much-higher estimate. Hence our criticism is well supported and very reasonable.

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4. Calculating the velocity curve.

Given the concerns about the values for mass and column properties, the velocity computations in this section are suspect. The basis of the computed velocity curves for the 33 and 54 Mkg masses are not described. Note that in Figure 2 that the 33 Mkg mass has a zero velocity at approx. 3.2 s, well before the collapse is completed.

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All the necessary input values are given, so that anyone can calculate their own curves to verify ours. We would be happy to provide hand calculations that give approximately the same results as the curves shown, which were produced numerically. We were not able to include such calculations in the original discussion, since we had reached the upper word limit.

226 In summary, *Reviewer #2 has not found any error at all* in our criticisms of Le and Bazant's TN.
227 We have correctly cited the TN itself, as well as Bazant's earlier papers on the subject, and the
228 NIST reports. Our criticisms, summarised below, are therefore still valid.

229

- 230 1. Le and Bazant do not adequately state their assumed specifications for the columns on
231 story 97.
- 232
- 233 2. The values they do state, i.e. average $M_p = 0.32$ MNm and total XS area 6.05 m², are
234 unsupported by any references or calculations, and *not even consistent with one another*,
235 given the known number and external dimensions of the columns, their own value for the
236 yield stress, and the standard textbook formula for M_p .
- 237
- 238 3. In calculating the momentum exchange between the falling upper block and the first
239 stationary floor, Le and Bazant have incorrectly used the mass of the concrete slab only,
240 rather than the full floor assembly.
- 241
- 242 4. Le and Bazant's mass value of 54.18 Mkg for floors 99-110 (plus the roof) is
243 unsupported by any evidence, and is much greater than the 33 Mkg value given by NIST.
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- 245 5. Le and Bazant's average value for the yield stress of the columns on story 97 contradicts
246 the yield stresses provided by NIST.
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- 248 6. With all these corrected data the value of u_{eq} , i.e. the downward displacement at which
249 the resistive and gravitational forces balance, is roughly 1.12 m, not the 0.065 m they
250 claim.
- 251
- 252 7. Using the corrected data, Le and Bazant's own methods predict a velocity reduction that
253 would be visible in a velocity plot derived from Etienne Sauret's high-definition video
254 footage of WTC 1. (Our discussion paper, unlike the TN, includes this necessary
255 empirical data, and no such reduction is visible.) The conclusion of Le and Bazant's TN
256 is not supported by the available evidence.

Exhibit H



Richard Johns [REDACTED]

Status of EMENG-1410R1

Tony Szamboti [REDACTED]

3 October 2012 at 03:27

To: [REDACTED]

Cc: [REDACTED]

Holly,

I am writing to you to ask you, as managing editor of the JEM, for the specific status of the EMENG-1410R1 manuscript resubmitted by Richard Johns and myself on June 21, 2012.

According to prior correspondence between you and Gregory Szuladzinski in February 2012, it was one of two Discussions submitted to JEM concerning the January 2011 article "Why the Observed Motion History of World Trade Center Towers Is Smooth" by Jia-Liang Le and Zdeněk P. Bažant.

It has come to our attention that the other Discussion, by Crockett Grabbe, will be published in the October 2012 issue of the Journal of Engineering Mechanics. We are therefore wondering what the holdup is with our Discussion.

The paper by Le and Bazant is in error, as their calculation of the conservation of momentum uses an impacted mass which is about 6 times smaller than it should be, the total column cross-sectional area they give is very inaccurate, the plastic moment they use is about half of what it actually was, and the impacting mass they use is nearly twice what it actually was. These errors seriously affected the conclusion of the paper, as we show, and have been sitting uncorrected on the journal for about 21 months now.

If you could please tell us why our Discussion paper is not in the queue for publishing we would appreciate it.

Regards,

Tony Szamboti
Blackwood, NJ



Richard Johns [REDACTED]

Status of EMENG-1410R1

Koppel, Holly [REDACTED]

5 October 2012 at 12:51

To: Tony Szamboti [REDACTED]

Cc: [REDACTED]

Dear Tony,

Thank you for your email concerning your Discussion #EMENG-1410. I have checked the status and the Chief Editor has assigned your Discussion to an Associate Editor to handle the review. I have sent an email query to the Associate Editor asking him for the status of his review and hopefully he will be able to complete it soon.

As for your second question, your Discussion on that article had been declined, so we moved forward with publication of the other Discussion and the author's Closure. Shortly after, you appealed the decline decision and that is the Discussion currently under review. If your Discussion #EMENG-1410 is accepted for publication, we will ask Prof. Bazant to write a Closure on your Discussion and publish them together.

Sincerely,

Holly Koppel

Managing Editor
American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, VA 20191

From: Tony Szamboti [REDACTED]
Sent: Wednesday, October 03, 2012 6:27 AM
To: Koppel, Holly
Cc: [REDACTED]
Subject: Status of EMENG-1410R1

[Quoted text hidden]



Richard Johns [REDACTED]

EMENG-1410 status

Richard Johns [REDACTED]

10 December 2012 at 09:25

To: [REDACTED]
Cc: Tony Szamboti [REDACTED]
Bcc: Ted Walter [REDACTED]

Dear Ms. Koppel,

Mr. Szamboti and I kindly ask that you forward this correspondence to the Chief Editor responsible for our manuscript.

As of June 13, 2012, an editor accepted that our Discussion (EMENG-1410) was suitable for publication, subject to our making "minor revisions" to address criticisms of a reviewer. We submitted a new manuscript with the requested revisions, which included additional citations and one changed numerical value, on June 21, 2012. The revised Discussion met every criticism that had been brought to our attention and we have received no further criticism of it.

Our findings are, in summary, that Le and Bazant used input values concerning WTC 1 and 2 that contradict those provided in NIST's final report of the collapses of WTC 1 and 2. When we repeated Le and Bazant's calculations, using the corrected values, the results were significantly different, thus showing their conclusions to be invalid.

We note that the "Obligations of Editors" of ASCE journals include the following:

If an editor is presented with convincing evidence that the substance, conclusions, references or other material included in a manuscript published in an ASCE journal are erroneous, the editor, after notifying the author(s) and allowing them to respond in writing, shall facilitate immediate publication of an errata. If possible, an editor shall also facilitate publication of appropriate comments and/or papers identifying those errors.

The words "shall facilitate *immediate* publication of an errata" indicate that our slightly revised manuscript should not have been allowed to languish for more than five months. We see no reason for delay, given that our work was accepted as valid, subject to making the minor revisions that we suggested in our rebuttal to a reviewer. The editor merely has to verify that we have indeed made those changes. We therefore urge that our Discussion be published without delay. If the publishing of our Discussion is to be delayed any further we request to know the exact status and the reason for the ongoing delay.

Sincerely,

Richard Johns

Anthony Szamboti

Exhibit I



Richard Johns [REDACTED]

Letter to the co-editors of the Journal of Engineering Mechanics

Roberto Ballarini [REDACTED]

9 May 2013 at 07:42

To: Richard Johns [REDACTED]

Cc: Tony Szamboti [REDACTED], [REDACTED], "Cochran, Angela" [REDACTED], "Parresol, Jennifer" [REDACTED]

Mr. Johns:

I responded this morning that I have not been involved with this paper, and that I plan to discuss it with Prof. Willam tomorrow to learn what is the history of this submission. I do not know which individuals you are referring to in your statement "...they may be hoping...". I will give you the benefit of the doubt that this does not include me. If it does, and you believe I have some hidden agenda associated with the submission, please address your comments directly to me instead of cc'ing me on messages your write to your colleagues that include such unfair speculations.

Roberto Ballarini

[Quoted text hidden]

--

Roberto Ballarini, Ph.D., P.E., F.ASCE
James L. Record Professor
Department of Civil Engineering
University of Minnesota
142 Civil Engineering Building
500 Pillsbury Drive S.E.
Minneapolis, MN 55455-0116

[REDACTED]
<http://www.ce.umn.edu/directory/faculty/ballarini.html>



Richard Johns [REDACTED]

Letter to the co-editors of the Journal of Engineering Mechanics

Richard Johns [REDACTED]

9 May 2013 at 08:35

To: Roberto Ballarini [REDACTED]

Cc: Tony Szamboti [REDACTED], [REDACTED], "Cochran, Angela" [REDACTED], "Parresol, Jennifer" [REDACTED]

Dear Dr. Ballarini (and others),

Please accept my apologies for hitting 'Reply All', and sending my reply to more people than intended.

I don't wish to accuse anyone of wrongdoing without specific evidence. Tony and I have no evidence concerning who (if anyone) may be causing the delay in the publication of our manuscript, so we certainly have no wish to accuse you of anything concerning this matter. Given the long delay in publication, however, it is natural to have suspicions of a general nature, and to speculate with colleagues.

I am encouraged to hear that you plan to discuss the matter with Prof. Willam tomorrow. Thank you.

Richard Johns

[Quoted text hidden]



Richard Johns [REDACTED]

Letter to the co-editors of the Journal of Engineering Mechanics

Tony Szamboti [REDACTED]

9 May 2013 at 19:27

To: Richard Johns [REDACTED], [REDACTED]

You guys probably didn't see this, as Dr. Ballarini only sent it to me this morning at 9:13 AM EDT. Richard's inadvertent message was sent at 10:10 AM EDT and Ballarini responded to it at 11:13 AM EDT.

I actually didn't see it until tonight after everything was over.

From: Tony Szamboti

Sent: Thursday, May 09, 2013 10:05 PM

To: Roberto Ballarini

Subject: Re: Letter to the co-editors of the Journal of Engineering Mechanics

Dr. Ballarini,

Thank you for responding and letting me know you will be looking into it.

Regards,

Anthony Szamboti

From: Roberto Ballarini

Sent: Thursday, May 09, 2013 9:13 AM

To: Tony Szamboti

Subject: Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

your discussion has been handled by Dr. Kaspar Willam; I will speak to him tomorrow about it.

Regards, Roberto Ballarini

On Thu, May 9, 2013 at 5:15 AM, Tony Szamboti [REDACTED] wrote:

Dr.'s Willam and Ballarini,

Please see the attached letter to your attention concerning a paper submitted to the Journal of Engineering Mechanics.

Regards,

Anthony Szamboti
Blackwood, NJ

--

Roberto Ballarini, Ph.D., P.E., F.ASCE

James L. Record Professor

Department of Civil Engineering

University of Minnesota

142 Civil Engineering Building

500 Pillsbury Drive S.E.

Minneapolis, MN 55455-0116

[REDACTED]
Fax 612-626-7750

<http://www.ce.umn.edu/directory/faculty/ballarini.html>

Exhibit J



Richard Johns [REDACTED]

Re: Letter to the co-editors of the Journal of Engineering Mechanics

Tony Szamboti [REDACTED]

8 July 2013 at 17:43

To: Richard Johns [REDACTED]

There is another e-mail after this.

From: Roberto Ballarini**Sent:** Monday, July 08, 2013 9:03 AM**To:** Tony Szamboti**Cc:** Cochran, Angela ; Parresol, Jennifer ; Kaspar Willam**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

last week I requested and received from the Journal office all papers, discussions and reviews it received and published that were associated with the World Trade Center. These hopefully will provide me with a better perspective on your submission. My objective is fairness, but as I stated previously, with the intention of ending what could potentially be a never ending discussion on this topic (the Journal is not the appropriate venue for such on going discussions).

I will do my best to read through what I have received over the next week or so. Then I will talk one more time to Dr. Willam to hear his opinion before making a decision.

Regards, RB

[Quoted text hidden]



Richard Johns [REDACTED]

Re: Letter to the co-editors of the Journal of Engineering Mechanics

Tony Szamboti [REDACTED]

8 July 2013 at 18:02

To: Roberto Ballarini [REDACTED]

Dr. Ballarini,

Thank you for taking the time to respond (twice), saying you would do your homework on the issues involved, and that you would then get back to us after meeting with and discussing it with Dr. Willam. We can surely wait until the end of the first week of August.

I would also say that we have no intent to burden the journal with endless building forensics, understand the reasons for the position the journal is now taking on it, and would not submit a new paper on the subject. It is only the correction of the paper we discussed that we would like published to ensure the record is clear and technically correct.

Regards,
Anthony Szamboti

From: Roberto Ballarini**Sent:** Monday, July 08, 2013 2:46 PM**To:** Tony Szamboti**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

On August 4 I will travel to Evanston for the ASCE EMI Conference. There will be an Editor/Associate Editor meeting at that conference that will be attended by Dr. Willam and some representatives from the Journals office. I will take this opportunity to meet person to person with Dr. Willam to discuss the appeal to your (declined) discussion, and determine whether the appeal has sufficient merit to overturn the original decision.

I agree with you that this process has taken too long, but I hope you will patient for a few more weeks. I prefer meeting with individuals face to face instead of carrying on multiple email conversations that can lead to confusion and delay.

I assure you that I will get back to you by the end of the first week of August.

Regards, RB

[Quoted text hidden]

Exhibit K



Richard Johns [REDACTED]

Decision on Manuscript MS EMENG-1410R1 - [EMID:185be93f26cb3342]

Journal of Engineering Mechanics [REDACTED]

9 August 2013 at 09:10

To: [REDACTED]

You are being carbon copied ("cc:'d") on an e-mail "To" "Anthony Szamboti" [REDACTED]

CC: [REDACTED]

Ref.: Ms. No. EMENG-1410R1
Appeal of decision on Ms. No. EMENG-1013
Anthony Szamboti, BSME; Richard Johns, PhD

Dear Mr. Szamboti,

Your Discussion, listed above, has completed the peer-review process for possible publication in ASCE's Journal of Engineering Mechanics. The editor's final decision was to decline the manuscript.

For your guidance, you will find below the reviewer's comments identifying those elements of the manuscript that prevent its acceptance by the Journal.

We realize that it takes a great deal of time and effort to prepare a paper for submission and we thank you for choosing the Journal of Engineering Mechanics for submission of your work

Sincerely,

Holly Koppel
Publishing Manager

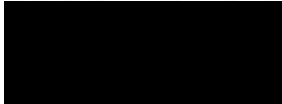
Reviewers' comments:

Your appeal of the decision on EMENG-1013 has been declined. This decision has been reached by the Co-Editors in Chief after a careful review of the original discussion, the review that recommended the discussion be declined, and your rebuttal to the review. The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers), but instead it is a journal for fundamental contributions to engineering mechanics. The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.

Exhibit L



**ENGINEERING
MECHANICS
INSTITUTE**



September 16, 2013

Re: Review of your appeal of the decision on your submitted discussion, "Reply and discussion of the paper Why the Observed Motion History of World Trade Center Towers is Smooth By Ja-Liang Le and Zdenek Bazant" (EMENG-1013).

Dear Mrs. Johns and Szamboti,

The Engineering Mechanics Institute Board of Governors reviewed your appeal of the decision on your submitted discussion, "Reply and discussion of the paper Why the Observed Motion History of World Trade Center Towers is Smooth By Ja-Liang Le and Zdenek Bazant" (EMENG-1013).

While it is unfortunate that the review of your discussion and the appeal was not done in a timely fashion, please know that this was not intentional. There was a period during 2012 when most papers experienced significant delays.

The ASCE Journals Director provided a timeline, all submissions, and correspondence to review. Upon review of these facts and your specific complaint, the Board feels that you were treated fairly and all ASCE Publication processes were properly followed. We understand that there was some confusion when you received a letter from ASCE requesting minor changes. This decision was on the appeal (EMENG-1410), not the discussion. This decision letter was necessary in order to get a slightly reformatted appeal document from you.

Thank you for your interest in the Journal of Engineering Mechanics and for bringing your concerns to our attention.

Sincerely,

Roger Ghanem, Ph.D., M.ASCE
President, Engineering Mechanics Institute of ASCE

Cc: Angela Cochran, Director, ASCE Journals
Amar Chaker, Director, EMI

Exhibit M



Richard Johns [REDACTED]

Reply to your appeal of the decision regarding your submitted discussion

Cochran, Angela [REDACTED]
To: Richard Johns [REDACTED]
Cc: Tony Szamboti [REDACTED]

26 September 2013 at 07:52

Mr. Johns,

Thank you for your note. I am fully aware of the board's decision and Prof. Ghanem's letter but thanks for attaching it.

Please let me explain your issues on point #1, which are confusing.

Your original discussion is paper number EMENG-1013. It was reviewed and declined on technical merits.

You submitted an appeal, which is paper number EMENG-1410. This can be confusing because the appeal consists of the discussion, an author rebuttal and your request for another review. This is an entirely new manuscript in the system, hence the new manuscript number. Prior to an editor even seeing your appeal, the Managing Editor sent you a decision letter in order to ask that you break the manuscript content up to meet the format of the appeal and she answered your question about comments from Reviewer 1, which were never obtained from the reviewer. In the system, we have to send a decision letter to an author in order to get a new version of a manuscript from an author. I agree that this was confusing and we are looking at making the letter a little clearer. Your discussion was not reviewed by a technical editor at that point and a technical editor did not render that decision. I sincerely apologize for the confusion.

Regarding point # 2, I believe the board felt that the discussion review and appeal was handled fairly and per our process, as the letter to you stated. It is your opinion that there are errors in the original paper. The reviewers did not agree with your position as stated in your submitted discussion. The editors and the board stand by the initial review. You have followed the appeal process to the board level and they have rendered a decision. The issue is considered closed. Thank you.

Angela Cochran

Director, Journals

Vice President, Council of Science Editors

 ORCID Ambassador

11/20/2017

Gmail - Reply to your appeal of the decision regarding your submitted discussion

From: Richard Johns [REDACTED]
Sent: Wednesday, September 25, 2013 5:22 PM
To: Cochran, Angela
Cc: Tony Szamboti
Subject: Fwd: Reply to your appeal of the decision regarding your submitted discussion

[Quoted text hidden]

Exhibit N



Richard Johns [REDACTED]

Reply to your appeal of the decision regarding your submitted discussion

Roger G. Ghanem [REDACTED]

18 October 2013 at 09:45

To: [REDACTED]
Cc: "Chaker, Amar" [REDACTED], "Cochran, Angela" [REDACTED], "Ballarini, Roberto" [REDACTED]

Dear Mr. Johns and Mr. Szamboti,

This email is in reply to your email dated October 9 2013 regarding your appeal of the decision on your submission to the Journal of Engineering Mechanics.

While your paper may very well be within the scope of the Journal, the Board's review of your case was concerned with whether or not the submission was treated fairly and in a manner that is consistent with the policies of the Journal of Engineering Mechanics. The Board found that indeed, the processing of your paper by the Editors was in conformance with these policies. As such, the Board must stand by the decision that was communicated to you by the Editors.

The Journal is run by the members for the members. The EMI Board and ASCE publications office merely oversee the implementation of a fair and streamlined process. The peer review process is paramount and remains the dominant factor in shaping the content of the Journal.

I hope that is unfortunately lengthy experience will not detract you from considering the Journal of Engineering Mechanics as a vehicle for disseminating your future scientific work.

Sincerely
Roger Ghanem (past president of EMI)

From: Richard Johns [REDACTED]
Sent: Wednesday, October 09, 2013 8:23 PM
To: Chaker, Amar
Cc: Tony Szamboti
Subject: Re: Reply to your appeal of the decision regarding your submitted discussion

[Quoted text hidden]

--

Roger Ghanem
210 KAP Hall
University of Southern California
Los Angeles, CA 90089
Tel: [REDACTED]

Exhibit O



ANNUAL REPORT TO THE EMI MEMBERSHIP FOR FY 2013

The purpose of this report is to present to the EMI membership a summary of the Institute's activities and progress during the period of October 1, 2012 to September 30, 2013 (FY 2013), as specified by article 9.3.1 of the EMI bylaws:

"Additional Duties of the President. The President, on behalf of the Board of Governors, shall prepare and distribute to the membership an Annual Report for the preceding fiscal year [...]"

Governance

Following the election held in the summer of 2012, J.S. Chen, Ph.D., F.EMI (UCLA) joined the EMI Board of Governors to replace George Voyiadjis, Ph.D., F.ASCE, F.EMI (Louisiana State University). Roger Ghanem, Ph.D., F.EMI (University of Southern California) was elected by the new EMI Board to serve a second year as the EMI President.

Over the summer of 2013, EMI conducted an election for two open positions on the EMI Board of Governors for FY 2014. Muhammad Hajj, Ph.D. (Virginia Tech) and Ning Lu, Ph.D., F.ASCE (Colorado School of Mines) were elected to replace Franz Ulm, Ph.D., F.EMI (M.I.T) and Alex Cheng, Ph.D., F.EMI (University of Mississippi). The EMI Board of Governors elected Roberto Ballarini Ph.D., P.E., F.EMI (University of Minnesota) to serve as President in FY 2014. Roger Ghanem will serve as Past President in FY 2014. Hayley H. Shen, Ph.D., F.EMI (Clarkson University) will step down as the ASCE-appointed Governor. She will be replaced by Dan Frangopol, Ph.D., P.E., F.SEI, F.EMI, Dist.M.ASCE (Lehigh University).

Many thanks to the outgoing members of the EMI Board for their years of dedicated service to the Institute, and welcome to the new EMI Governors!

Membership

There are two ways of becoming an EMI member: members can join ASCE and select EMI as one of their Institutes (ASCE/EMI membership), or they may choose to be members of EMI only (EMI-only membership). EMI membership provides: member discount on EMI publications, EMI journals subscriptions, and EMI conference and webinar registrations; the ability to nominate members for elected positions on the EMI Board of Governors, to vote in EMI elections, and apply to join EMI

technical committees; a subscription to the EMI newsletter; and access to valuable resources and information on the EMI website.

It should be emphasized however that the main reason for becoming a member of EMI is the desire to become part of a community that one identifies with, and wants to interact with and contribute to.

Membership dues have been kept at same level since the start of EMI in FY 2008:

- \$80 per calendar year for EMI-only members;
- \$25 for EMI-only (graduate) student members;
- For ASCE members, free as the first Institute and \$30 after the first Institute.

A discount on the membership dues is provided to members residing in certain countries based on the [World Bank classification](#). On-line membership applications are available for [ASCE/EMI membership](#) and for [EMI-only membership](#). EMI also has a [member referral program](#).

EMI pursued its efforts to attract and retain younger members through low membership fees for graduate students, student competitions, and the recently established EMI Leonardo da Vinci award. EMI membership numbers remained stable (about 2,100), with members in 63 countries, 24% of them students, and over 90% in academia or research. EMI counts 10 Distinguished Members of ASCE among its members.

Publications

EMI is proud of its new publications which will help disseminate important new knowledge and engage the membership of the Institute.

The second volume of the *Lecture Notes in Mechanics* series, [Stochastic Models of Uncertainties in Computational Mechanics](#) by Prof. Christian Soize, Ph.D. (Université Paris-Est), was published in October. The manuscript of a third volume, *Why Are There No Monsters on Earth?* by Prof. Franz Ulm, Ph.D., P.E. (MIT), is currently being finalized. Six additional volumes in the series are under preparation. All volumes in the series will be published as printed books and will also be available as DRM-free eBooks. Many thanks to Prof. Roger Ghanem, Editor of the *Lecture Notes in Mechanics* series for his efforts to start and lead the LNMEch series! Prof. Franz Ulm will replace him as Editor of the series.

The second volume in the *Trends in Engineering Special Publications* series, [Coastal Hazards](#), edited by Wenrui Huang, Ph.D. (Florida State University), Ken-han Wang (University of Houston) and Qin Jim Chen (Louisiana State University) was published in January.

EMI also published [Poromechanics V](#), proceedings of the Fifth BIOT Conference on Poromechanics held at the Vienna University of Technology in July in Vienna, Austria, edited by Christian Hellmich, Bernhard Pichler and Dietmar Adam and [Mechanics and Physics of Creep, Shrinkage and Durability of Concrete](#), proceedings of the CONCREEP-9 Conference held in September at M.I.T., edited by Franz Ulm, Hamlin Jennings and Roland Pellenq.

Professor Kaspar Willam, Ph.D., NAE (University of Houston) has been serving as the Editor of the monthly [Journal of Engineering Mechanics](#), the flagship journal of EMI, since the fall of 2010. In order to reduce the time to publication, the EMI Board of Governors appointed Roberto Ballarini, Ph.D., P.E., F.EMI (University of Minnesota) as Co-Editor of *JEM*. Several new Associate Editors joined the *JEM* Editorial Board. The number of papers submitted for publication remains high and the acceptance rate is stable. With the author's permission, articles that receive final acceptance are posted on-line ahead of print in their non-copy edited form within 72 hours, together with their digital object identifier (d.o.i.). Three special issues were published in March (Experimental Methods in Damage Detection and Wind Engineering, edited by Asad Esmaeily), June (Dynamics and Analysis of Large Structures, edited by Andrew Smyth and Raimondo Betti), and August (Stability of Composite Structures, edited by Noël Challamel and Pizhong Qiao). Additional special issues of *JEM* are in preparation, including Identification and Updating of Structural Dynamics Systems (edited by Roger Ghanem). The statistics for the time from submission to final acceptance have sharply improved. The impact factor of *JEM* increased, and its h-index shows it is a very influential journal. Many thanks to outgoing *JEM* Editor Kaspar Willam and *JEM* Associate Editor Pierre-Yves Hicher!

Prof. George Voyiadjis, Ph.D., F.ASCE (Louisiana State University) is the Editor of the quarterly [Journal of Nanomechanics and Micromechanics](#) launched in 2011. Three special issues of *JNM* are in preparation: Mechanics of Nanomaterials (Xi Chen); and Multiscale Characterization, Modeling and Simulation of Stone-based Infrastructure Materials (Linbing Wang) and Multiscale Modeling and Simulation of Physical Phenomena of Material Systems (Lee, Wang, and Chen).

Links to the table of contents of the two EMI journals are regularly included in the monthly EMI newsletter, and members may subscribe to e-mail alerts for the journals table of contents. E-mail delivery of table of contents alerts for ASCE or EMI journals may be activated by visiting http://ascelibrary.org/mytools/table_of_contents_alerts_email. One may also subscribe to the RSS feeds of ASCE or EMI journals and have titles, authors, and citation data for newly published articles delivered directly to one's desktop by visiting http://ascelibrary.org/mytools/rss_feeds.

Conferences

Prof. Gianluca Cusatis, Ph.D. (Northwestern University) chaired the EMI 2013 Conference ([EMI 2013](#)) held on August 4-7, 2013 at Northwestern University in Evanston, Illinois. A total of nearly 500 people attended the event. The [technical program](#) featured ten parallel tracks to accommodate approximately 500 presentations. Social events at the conference included a welcome reception, a banquet and award presentation ceremony, and a farewell reception.

The conference featured six keynote lectures using a new format where the 45-minute keynote lecturer's presentation was followed by questions and comments from a panel of 3 experts, leaving a few minutes for questions from the attendees. The topics covered included:

- Tail-Equivalent Linearization in Nonlinear Stochastic Dynamics (Prof. Armen Der Kiureghian, University of California, Berkeley)

- On Nanomaterial Transport in the Subsurface: Emerging Pollutants and Novel Characterization Tools (Prof. Linda Abriola, Tufts University)
- Violent Flows and GPUs (Prof. Robert Dalrymple, Johns Hopkins University)
- Concrete in the Era of Sustainability: New Opportunities for Materials Characterization (Prof. Kimberly Kurtis, Georgia Institute of Technology)
- Innovative Inverse Analysis Procedures for Mechanical Characterization of Materials and Diagnosis of Structures (Prof. Giulio Maier, Politecnico di Milano, Italy)
- Cement: A Multi-scale Porous Material Under the Nanoscope (Professor Roland Pellenq, Massachusetts Institute of Technology)

The six keynote lectures were recorded, and after editing, the videos will be posted on the EMI web site. In addition to the morning and afternoon plenary keynotes, track keynotes were added to the program to provide an introduction and overview of the tracks' topics.

Three student competitions were organized by the Probabilistic Mechanics, Computational Mechanics, and Structural Health Monitoring and Control committees of EMI.

New at this conference was the use of the Conference4me app for iOS and Android smartphones to provide access to the technical program, including the abstracts and to allow attendees to create a personal agenda. Another innovation at the conference was the short course on "Mechanics of Random and Fractal Materials and Structures" given by Prof. Martin Ostoja-Starzewski (University of Illinois at Urbana-Champaign). The course was recorded on video and will be offered as a video-on-demand short course through ASCE's Continuing Education services.

With the exception of the Poromechanics Committee which held its meeting in July at the BIOT-5 Conference on Poromechanics, all the EMI technical committees held their annual meeting at the conference, as did the EMI Communications Committee and the EMI Board of Governors.

The award ceremony included the presentation of medals to the winners of the Biot (Prof. Patrick Selvadurai, Ph.D., DSc. FRSC, FCSCE, P.Eng., McGill University), Newmark (Prof. Somnath Ghosh, Ph.D., M.ASCE, Johns Hopkins University), Housner (Prof. Tsu T. Soong, Ph.D., P.E., F.ASCE, University at Buffalo) and von Kármán (Prof. Wilfred (Bill) D. Iwan, Ph.D., Dist.M.ASCE, NAE) awards.

The award ceremony also featured the recognition of the first group of EMI Fellows: the recipients of Society awards administered by EMI, and the members who served on the Executive Committee of the former Engineering Mechanics Division or on the Board of Governors of the Engineering Mechanics Institute. (See below a group photo of the new Fellows of EMI present at the event.)

Many attendees took advantage of the special offer on the occasion of the conference to become EMI members. By all accounts, the EMI 2013 conference was a resounding success. A photo gallery of the EMI 2013 conference and associated activities is posted on the EMI web site. Many thanks to Prof. Gianluca Cusatis of Northwestern University and his team for organizing and hosting this outstanding event!

EMI is now planning the 2014 EMI Conference to be held on August 5-8, 2014 at McMaster University in Hamilton, Ontario, Canada, and chaired by Prof. Samir Chidiac.

EMI also took part in the organization of [BIOT-5](#), the very successful Fifth Conference on Poromechanics held on July 10-12, 2013 at the Vienna University Technology, in Vienna, Austria, chaired by Prof. Christian Hellmich, Director of the Institute for Mechanics of Materials and Structures. This partnership strengthened the relationship between EMI and the BIOT conference series and provided to EMI a start in international activities.



L to R: J.S. Chen, Lori Brady, Leon Keer, John Rudnicki, Tsu T. Soong, Alex Cheng, Andrew Smyth, Hayley Shen, Armen der Kiureghian, Kaspar Willam, Zdeněk P. Bažant, Bill Iwan, Dan Frangopol, and Roberto Ballarini.

Local Activities

The Engineering Mechanics Committee of the ASCE Met Section organized two major events at Columbia University: the 2012 Biot Lecture, presented by Prof. Patrick Selvadurai, Ph.D., DSc. FRSC, FCSCE, P.Eng., McGill University on November 19 2012, titled “Contact and Inclusion Problems in Poromechanics” and the 2013 Mindlin Lecture, presented by Prof. Thomas J.R. Hughes (University of Texas at Austin) on April 25, 2013, titled “Isogeometric Analysis” The videos of these and other lectures are posted on the EMI website at <http://www.asce.org/emi/About-EMI/Links-of-Interest/>.

Continuing Education

EMI offered its first webinar on October 18. Prof. Markus Buehler, Ph.D. (M.I.T.) presented “Failure of Molecules, Bones, and the Earth Itself: Nanotechnology and Bio-inspired Materials in Civil Engineering.” EMI is actively soliciting proposals for new webinars.

The short course on “Mechanics of Random and Fractal Materials and Structures” given by Prof. Martin Ostoja-Starzewski (University of Illinois at Urbana-Champaign) was recorded on video and will be offered as a video-on-demand short course through ASCE’s Continuing Education services.

Awards

EMI expanded its extensive [awards program](#) with the creation of the Masanobu Shinozuka Stochastic Systems Medal which may be presented in odd years, starting in 2015.

The winners of four prestigious Society Awards were recognized on August 6 at the Awards Banquet and award presentation ceremony of the EMI 2013 Conference:

2013 NATHAN M. NEWMARK MEDAL

Somnath Ghosh, Ph.D., M.ASCE (Johns Hopkins University) was awarded the Nathan M. Newmark Medal *"for outstanding contributions to the field of computational mechanics of materials and structures, especially in image-based micromechanics and spatial and temporal multi-scale mechanics, and for sustained ambassadorship across the structural and materials engineering communities."*

2013 MAURICE A. BIOT MEDAL

Patrick Selvadurai, Ph.D., DSc. FRSC, FCSCE, P.Eng. (McGill University) was awarded the Maurice A. Biot Medal *"for seminal contributions to the development of mathematical solutions, computational models, and experimental simulations of poromechanics phenomena with relevance to geomaterials and environmental geomechanics problems."*

2013 THEODORE VON KÁRMÁN MEDAL

Wilfred (Bill) D. Iwan, Ph.D., Dist.M.ASCE, NAE (Caltech) was awarded the Theodore von Karman Medal *"for thematically rich engineering mechanics contributions to analysis and design of critical systems and structures under adverse dynamic loads, for stellar mentorship of numerous students, and for exemplary leadership in aseismic societal preparedness."*

2013 GEORGE W. HOUSNER STRUCTURAL CONTROL AND MONITORING MEDAL

Tsu T. Soong, Ph.D., P.E., F.ASCE (University at Buffalo) was awarded the George W. Housner Structural Control and Monitoring Medal *"for pioneering contributions to the field of structural control and monitoring of civil infrastructure systems."*

The 2013 JACK E. CERMAK Medal was awarded to Professor William (Bill) H. Melbourne, Emeritus Professor, Monash University, Director and Founder, MEL Consultants Pty. Ltd, and was presented at the 2013 SEI Congress.

The 2013 EMI Leonardo da Vinci Award was presented to Kaushik Dayal, Ph.D. (Carnegie Mellon University) *"for important contributions to understanding far-from-equilibrium molecular dynamics; domain patterns in ferroelectrics; and phase transformations in peridynamics analyses."*

The finalists and the winner of the Student Paper Competitions and of the Student Research Poster Competitions were also presented with certificates:

- Computational Mechanics Poster Competition: Ryan Hurley, Caltech; Utkarsh Mital, Caltech; Jiahao Cheng, Johns Hopkins University; and Arun Gain, University of Illinois, Urbana-Champaign
- Probabilistic Methods Paper Competition: Bing Xue, University of Minnesota; Iris Tien, University of California, Berkeley; and Sourish Chakravarty, University at Buffalo, State University of New York
- Structural Health Monitoring & Control Paper Competition: Patrick Brewick, Columbia University.

Communications

The monthly [EMI newsletter](#) continues to provide timely information to the membership regarding activities of the Institute, upcoming events and deadlines, and other useful information such as the table of contents of the current issues of the EMI journals. The newsletter also features a Research Group Profile that highlights the work of research team. Each RGP presents the problem the team is addressing, its approach, its findings, their impact, a list of selected publications, current research team members, industry partners, and research collaborations.

The [EMI website](#) has a host of useful features, including:

- A carousel slideshow highlighting current research topics in engineering mechanics and providing videos of keynote lectures given at the EMI conference.
- A searchable database of a growing number of [Research Group Profiles](#) (RGPs) that present a snapshot of the research undertaken by EMI members and an explanation of why what they do matters.
- EMI-specific sections on [books and journals](#), [conferences](#), [continuing education](#), [membership](#), [membership benefits](#), and [awards](#).
- An EMI news section.
- [Current](#) and [recent issues](#) of the EMI newsletter.
- A [calendar](#) of EMI events or events of interest to the EMI membership.
- A searchable section on [EMI committees](#) providing automatically updated committee membership rosters and committee charges.
- A page of [links of interest](#), including videos of lectures and keynote presentations
- A [job postings](#) section.
- A [Frequently Asked Questions](#) (FAQs) section specific to EMI.

The site provides additional valuable material such as presentations and videos of keynote lectures given at EMI conferences and other prestigious lectures, archived EMI newsletters, photo galleries of EMI events, etc. The site also includes an [on-line EMI membership application](#) and an [on-line technical committee membership application](#). In addition to these EMI-specific areas, the integration with the ASCE site provides immediate access to other areas of general interest.

Committees

The EMI committees continue to do a phenomenal amount of quality work: they review papers submitted for possible publication in one of the two EMI journals; they organize sessions at the EMI annual conference; some of them also organize student paper or poster competitions at the annual conference. Most EMI committees met at the EMI 2013 conference. Many thanks to all our committee chairs and committee members for their continued support of EMI activities! EMI is grateful to the outgoing committee chairs for their dedication and hard work: Roberto Ballarini (Biomechanics), Kam Tim Chau (Elasticity), Pierre-Yves Hicher (Granular Materials), Richard Regueiro (Modeling Inelasticity Multiscale Behavior), Steven F. Wojtkiewicz, Jr. (Probabilistic Methods), Noel Challamel (Stability), and Jeff Scruggs (Structural Health Monitoring and Control).

Strategic Planning

At the close of its sixth year of existence, EMI is concluding a strategic planning exercise. A SWOT (strengths, weaknesses, opportunities and threats) analysis was done at a meeting of the EMI Board of Governors in February 2012. A survey of over 5,300 members and non-members was conducted in August 2012 to obtain feedback on EMI's performance and to better understand what the engineering mechanics community expects from EMI. This was followed by an EMI Strategic Planning meeting in January 2013 at ASCE Headquarters in Reston, VA. This effort led to the identification of specific goals and objectives for EMI and the preparation of an action plan that will guide the Institute for the next five years or so.

Finances

EMI is required to operate within the financial model of the ASCE Institutes. As such, its main sources of income are membership dues, publications and journal royalties, and net income from conferences and continuing education activities. Its main areas of expenses are: Board and committee operations; Institute operations; and staff salary, fringes and travel. The net result for FY 2013 was a net income of \$17K, with an additional \$6K membership income to be credited in calendar year 2012. This net result for FY 2013 will be added to EMI's reserves which serve both as a "rainy day" fund and a source of funding for new promising initiatives. Overall, EMI's financial situation is very satisfactory.

Looking back at FY 2013, EMI has made significant progress in several areas. EMI is becoming active in local activities, international activities and continuing education, albeit on a small scale. EMI has kept with the tradition of organizing excellent annual conferences and producing content-rich publications. EMI had four new publications in FY 2013. EMI has taken steps to reduce the time to publication for *JEM* and increase submissions to *JNM*. EMI held the very successful EMI 2013 conference and co-organized the very successful BIOT-5 conference. EMI offered a short course and a webinar. EMI added a Society award to its awards program and has continued to provide financial support to the student competitions. EMI has provided new content on its website and kept it up to date. It has also kept its members informed through its newsletter. EMI concluded its strategic planning effort. The EMI membership is now electing members of its Board of Governors on a regular basis and has a say in the governance of the Institute.

EMI is clearly a healthy, productive and vibrant organization which has made considerable progress since its founding six years ago. This is mostly due to the dedication and hard work of its volunteers and the effective support of EMI staff.

In spite of this progress and these accomplishments, EMI needs to improve in other areas: EMI needs to establish better connections to industry and to enhance its continuing education program.

There are many ways EMI members can help the Institute:

- By renewing their membership
- By giving a (tax deductible) voluntary contribution to EMI when renewing their membership
- By encouraging their graduate students and colleagues to join EMI
- By attending the EMI conference
- By getting involved in committee work
- By being responsive to requests for reviews of journal articles
- By suggesting or offering webinars and short courses
- By encouraging organizations they know in industry and government that are users of advanced mechanics to become organizational members of EMI
- By contributing articles to the EMI journals
- By sending short articles, pictures, videos, and announcements for the EMI newsletter and the EMI website, etc.

With strong support, engagement and participation from its members, I am confident that EMI will become stronger and maintain excellence in all of its activities and products and that EMI membership will remain a compelling proposition.

Respectfully submitted,

Roger Ghanem, Ph.D., F.EMI
EMI President, FY 2013

Exhibit P

From: "Jialiang Le" [redacted]
To: [redacted]
Date: 5/8/2010 3:10:18 AM
Subject: RE: [Fwd: Re: revised paper]
Attachments: [WTC-NoteOnTopMotion-LeBaz.pdf](#)

Dear Zdenek:

The attached paper has been submitted to ASCE in your name.

The suggested reviewers are: Prof. G. Voyiadjis (Louisiana State University), Prof. L. Cedolin (Politecnico di Milano), Prof. M. Jirasek (Czech Technical University), Prof. Cusatis (Rensselaer Polytechnic Institute), and Prof. Dvorak (Northwestern University).

Thank you.

Best regards,
Jialiang

From: Zdenek P. Bazant [redacted]
Sent: 07 May 2010 18:11
To: Jialiang Le
Subject: [Fwd: Re: revised paper]

As you see, you can submit it now (in my name). I will also send him a copy and the the suggested names. Zdenek

----- Original Message -----

Subject: Re: revised paper
Date: Fri, 07 May 2010 06:58:37 -0500
From: George Z. Voyiadjis [redacted]

References: [redacted]

Zdenek,

Please go ahead and submit it since it has a different title.

Best Regards
George

At 10:34 PM 5/6/2010, you wrote:

>George: Our slightly revised paper with a modified title is ready
>for submission. Can we submit it while the current submission still
>shows as "pending"? Should we also send a copy to you, so you could
>begin a new review right away? Best, Zd

>
>--

>ZDENEK P. BAZANT
>McCormick Institute Professor and W.P. Murphy Professor of Civil
>Engineering and Materials Science,
>Northwestern University
>2145 Sheridan Road, CEE Rm A135, Evanston, Illinois 60208-3109, USA
>[redacted]. Secr. 491-3351. Dept. 491-3257
>E-mail: [redacted]
>Home: www.civil.northwestern.edu/people/bazant.html

--

ZDENEK P. BAZANT
McCormick Institute Professor and W.P. Murphy Professor of Civil Engineering and Materials Science,
Northwestern University

2145 Sheridan Road, CEE Rm A135, Evanston, Illinois 60208-3109, USA

Tel.: [REDACTED] Secr. 491-3351. Dept. 491-3257

E-mail: [REDACTED]

Home: www.civil.northwestern.edu/people/bazant.html

Exhibit B
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

ASCE ethics complaints

Tony Szamboti [REDACTED]

7 May 2013 at 03:32

To: Ted Walter [REDACTED]

Cc: Richard Johns [REDACTED]

Below is the letter Gregory received in response to his letter of appeal. I think we should go directly to the two guys who signed that letter. The time for giving them time has long since ended. We want a response that we can then determine a path forward from, or their commitment to publish the paper and these two guys are the only ones who can provide one of those two things.

From: Cochran, Angela [REDACTED]**Sent:** Monday, 12 November 2012 10:25 AM**To:** [REDACTED]**Subject:** JEM Paper

Dear Mr. Szuladzinski,

We have received your rebuttal to the decision on your technical note dated October 3, 2012, and have considered the technical merits of your appeal.

The Journal has published many papers and discussions to papers on this topic as have other ASCE Journals. The Journal of Engineering Mechanics' scope is advances in mechanics as applied to civil engineering, not unending forensic analyses. There are other venues for such things.

It is our opinion that the Journal is not the appropriate forum for this paper.

Thank you,

Kaspar Willam, Ph.D., F.ASCE, University of Houston

Roberto Ballarini, Ph.D., P.E., F.ASCE, University of Minnesota

Co-Editors, Journal of Engineering Mechanics

Angela Cochran

Director, Journals

American Society of Civil Engineers

1801 Alexander Bell Dr.

Reston, VA 20191

[REDACTED]

From: Ted Walter

Sent: Tuesday, May 07, 2013 2:50 AM**To:** Tony Szamboti**Cc:** Richard Johns

3/1/22, 4:36 PM

Gmail - ASCE ethics complaints

[Quoted text hidden]

[Quoted text hidden]

Exhibit C
To Ethics Complaint
Amendment

To: Kaspar Willam & Roberto Ballarini
Co-Editors, Journal of Engineering Mechanics

From: Anthony Szamboti & Richard Johns

Date: May 9, 2013

Subject: The holdup in publishing EMENG-1410R1

Dear Dr.'s Willam and Ballarini,

We are writing to you after nearly two years of waiting for our Discussion paper (EMENG-1410R1) to be published in the Journal of Engineering Mechanics.

The Discussion was of the paper

Why the Observed Motion History of World Trade Center Towers is Smooth

By Ja-Liang Le and Zdeněk Bažant

DOI: 10.1061/_ASCE_EM.1943-7889.0000198

Journal of Engineering Mechanics, Vol. 137, No. 1, January 1, 2011, pg. 82-84

It was submitted in May 2011, within the five month window allowed by the journal, and subsequently rejected a year later in May 2012. In looking over the review it was clear that the reviewer did not have a full understanding of the specifics involved and we prepared a rebuttal and appeal showing the rejection was unjustified. We submitted the rebuttal and appeal on June 7, 2012. Our rebuttal was reviewed and we were informed by the journal on June 13, 2012, in the e-mail letter shown below in italics, that the Discussion had completed review and required only minor revisions and an editorial review prior to publishing.

Ref.: Ms. No. EMENG-1410

Appeal of decision on Ms. No. EMENG-1013

Anthony Szamboti, BSME; Richard Johns, PhD

Dear Mr. Szamboti,

Your Discussion, listed above, has completed a review for publication in ASCE's Journal of Engineering Mechanics. The editor has requested that minor revisions be made based on the reviewers' evaluations (shown at the end of this email) and submitted for re-review by 06-28-2012. This revision will only be seen again by the editor and will not undergo the entire review process.

Please submit the revised manuscript and a detailed response to the reviewers' criticisms by logging onto the Editorial Management system at <http://jrnemeng.edmgr.com/> and clicking on the "Submissions Needing Revision".

Be advised that the editor may request further revision or decline your revised version if all of the reviewers' comments have not been adequately addressed.

Comments from the Editor and Reviewers can be found below.

We look forward to receiving your revised manuscript.

Sincerely,

*Holly Koppel
Publishing Manager*

Reviewers' comments:

Thank you for your appeal. There were no reviews from Reviewer 1, this reviewer was un-assigned after failure to submit the review.

Please upload your appeal as your "Cover Letter" and submit your Discussion text as the manuscript for review.

To ensure there would be no further misunderstanding, as had happened in the review which rejected the paper, our revision included removal of anything which did not have solid references in either the NIST report on the WTC collapses or traditional engineering literature. We then resubmitted the paper on June 21, 2012, seven days ahead of the required June 28, 2012 due date. We have since received little information regarding the paper's status. As the review which was used for its rejection was shown to be unjustified, it seems our paper has been unfairly languishing for nearly two years now, while the inaccuracies in the discussed paper remain uncorrected on the Journal of Engineering Mechanics.

In summary, the Journal of Engineering Mechanics did publish the Le and Bazant paper in January 2011 and it contains a number of clear inaccuracies, so severe that when corrected the results are in complete opposition to those claimed by the authors. The Journal of Engineering Mechanics needs to live up to its venerable reputation and see to it that the right thing is done by publishing our Discussion to correct these inaccuracies. If not, these types of things tend to have a corrosive effect over time, as word of them gets out to the engineering community at large. It is our hope that this can be avoided by your appropriate action.

Sincerely,

Anthony Szamboti & Richard Johns

Exhibit D
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Letter to the co-editors of the Journal of Engineering Mechanics

Tony Szamboti [REDACTED]

9 May 2013 at 19:27

To: Richard Johns [REDACTED], [REDACTED]

You guys probably didn't see this, as Dr. Ballarini only sent it to me this morning at 9:13 AM EDT. Richard's inadvertent message was sent at 10:10 AM EDT and Ballarini responded to it at 11:13 AM EDT.

I actually didn't see it until tonight after everything was over.

From: Tony Szamboti**Sent:** Thursday, May 09, 2013 10:05 PM**To:** Roberto Ballarini**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Dr. Ballarini,

Thank you for responding and letting me know you will be looking into it.

Regards,

Anthony Szamboti

From: Roberto Ballarini**Sent:** Thursday, May 09, 2013 9:13 AM**To:** Tony Szamboti**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

your discussion has been handled by Dr. Kaspar Willam; I will speak to him tomorrow about it.

Regards, Roberto Ballarini

On Thu, May 9, 2013 at 5:15 AM, Tony Szamboti [REDACTED] wrote:

Dr.'s Willam and Ballarini,

Please see the attached letter to your attention concerning a paper submitted to the Journal of Engineering Mechanics.

Regards,

Anthony Szamboti
Blackwood, NJ

--

Roberto Ballarini, Ph.D., P.E., F.ASCE
James L. Record Professor
Department of Civil Engineering
University of Minnesota
142 Civil Engineering Building
500 Pillsbury Drive S.E.
Minneapolis, MN 55455-0116

[REDACTED]
<http://www.ce.umn.edu/directory/faculty/ballarini.html>



Richard Johns [REDACTED]

Letter to the co-editors of the Journal of Engineering Mechanics

Roberto Ballarini [REDACTED]

9 May 2013 at 07:42

To: Richard Johns [REDACTED]

Cc: Tony Szamboti [REDACTED], [REDACTED], "Cochran, Angela" [REDACTED], "Parresol, Jennifer" [REDACTED]

Mr. Johns:

I responded this morning that I have not been involved with this paper, and that I plan to discuss it with Prof. Willam tomorrow to learn what is the history of this submission. I do not know which individuals you are referring to in your statement "...they may be hoping...". I will give you the benefit of the doubt that this does not include me. If it does, and you believe I have some hidden agenda associated with the submission, please address your comments directly to me instead of cc'ing me on messages your write to your colleagues that include such unfair speculations.

Roberto Ballarini

[Quoted text hidden]

--

Roberto Ballarini, Ph.D., P.E., F.ASCE
James L. Record Professor
Department of Civil Engineering
University of Minnesota
142 Civil Engineering Building
500 Pillsbury Drive S.E.
Minneapolis, MN 55455-0116

[REDACTED]
<http://www.ce.umn.edu/directory/faculty/ballarini.html>

Exhibit E
To Ethics Complaint
Amendment



Ted Walter [REDACTED]

Fw: Letter to the co-editors of the Journal of Engineering Mechanics

Tony Szamboti [REDACTED]

Tue, May 14, 2013 at 9:06 PM

To: Richard Johns [REDACTED], [REDACTED]

From: Roberto Ballarini**Sent:** Tuesday, May 14, 2013 8:22 AM**To:** Tony Szamboti**Cc:** Kasper Willam ; Kasper J. Willam**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

yes. My understanding is that you will be notified of the final decision very soon.

Regards

On Tue, May 14, 2013 at 5:42 AM, Tony Szamboti [REDACTED] wrote:

Dr. Ballarini,

Have you been able to speak to Dr. Willam about the discussion paper I referred to in my letter yet?

Regards,

Tony Szamboti

From: Tony Szamboti**Sent:** Thursday, May 09, 2013 10:05 PM**To:** Roberto Ballarini**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Dr. Ballarini,

Thank you for responding and letting me know you will be looking into it.

Regards,

Anthony Szamboti

From: Roberto Ballarini**Sent:** Thursday, May 09, 2013 9:13 AM**To:** Tony Szamboti**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

your discussion has been handled by Dr. Kasper Willam; I will speak to him tomorrow about it.

Regards, Roberto Ballarini

On Thu, May 9, 2013 at 5:15 AM, Tony Szamboti [REDACTED] wrote:

Dr.'s Willam and Ballarini,

Please see the attached letter to your attention concerning a paper submitted to the Journal of Engineering Mechanics.

Exhibit F
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Re: Letter to the co-editors of the Journal of Engineering Mechanics

Tony Szamboti [REDACTED]

8 July 2013 at 17:43

To: Richard Johns [REDACTED]

There is another e-mail after this.

From: Roberto Ballarini**Sent:** Monday, July 08, 2013 9:03 AM**To:** Tony Szamboti**Cc:** Cochran, Angela ; Parresol, Jennifer ; Kaspar Willam**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

last week I requested and received from the Journal office all papers, discussions and reviews it received and published that were associated with the World Trade Center. These hopefully will provide me with a better perspective on your submission. My objective is fairness, but as I stated previously, with the intention of ending what could potentially be a never ending discussion on this topic (the Journal is not the appropriate venue for such on going discussions).

I will do my best to read through what I have received over the next week or so. Then I will talk one more time to Dr. Willam to hear his opinion before making a decision.

Regards, RB

[Quoted text hidden]



Richard Johns [REDACTED]

Re: Letter to the co-editors of the Journal of Engineering Mechanics

Tony Szamboti [REDACTED]

8 July 2013 at 18:02

To: Roberto Ballarini [REDACTED]

Dr. Ballarini,

Thank you for taking the time to respond (twice), saying you would do your homework on the issues involved, and that you would then get back to us after meeting with and discussing it with Dr. Willam. We can surely wait until the end of the first week of August.

I would also say that we have no intent to burden the journal with endless building forensics, understand the reasons for the position the journal is now taking on it, and would not submit a new paper on the subject. It is only the correction of the paper we discussed that we would like published to ensure the record is clear and technically correct.

Regards,
Anthony Szamboti

From: [Roberto Ballarini](#)**Sent:** Monday, July 08, 2013 2:46 PM**To:** [Tony Szamboti](#)**Subject:** Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

On August 4 I will travel to Evanston for the ASCE EMI Conference. There will be an Editor/Associate Editor meeting at that conference that will be attended by Dr. Willam and some representatives from the Journals office. I will take this opportunity to meet person to person with Dr. Willam to discuss the appeal to your (declined) discussion, and determine whether the appeal has sufficient merit to overturn the original decision.

I agree with you that this process has taken too long, but I hope you will patient for a few more weeks. I prefer meeting with individuals face to face instead of carrying on multiple email conversations that can lead to confusion and delay.

I assure you that I will get back to you by the end of the first week of August.

Regards, RB

[Quoted text hidden]

Exhibit G
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Decision on Manuscript MS EMENG-1410R1 - [EMID:185be93f26cb3342]

Journal of Engineering Mechanics [REDACTED]

9 August 2013 at 09:10

To: [REDACTED]

You are being carbon copied ("cc:'d") on an e-mail "To" "Anthony Szamboti" [REDACTED]

CC: [REDACTED]

Ref.: Ms. No. EMENG-1410R1
Appeal of decision on Ms. No. EMENG-1013
Anthony Szamboti, BSME; Richard Johns, PhD

Dear Mr. Szamboti,

Your Discussion, listed above, has completed the peer-review process for possible publication in ASCE's Journal of Engineering Mechanics. The editor's final decision was to decline the manuscript.

For your guidance, you will find below the reviewer's comments identifying those elements of the manuscript that prevent its acceptance by the Journal.

We realize that it takes a great deal of time and effort to prepare a paper for submission and we thank you for choosing the Journal of Engineering Mechanics for submission of your work

Sincerely,

Holly Koppel
Publishing Manager

Reviewers' comments:

Your appeal of the decision on EMENG-1013 has been declined. This decision has been reached by the Co-Editors in Chief after a careful review of the original discussion, the review that recommended the discussion be declined, and your rebuttal to the review. The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers), but instead it is a journal for fundamental contributions to engineering mechanics. The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.

Exhibit H
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Update on CPC case

Hoke, Tara [REDACTED]

2 October 2019 at 12:39

To: Scott Grainger [REDACTED], Richard Johns [REDACTED]

Dear Scott and Richard:

Greetings! I have received voicemails from both of you, and I apologize for the delay in responding—I was away on travel last week and am still catching up on correspondence.

I know when I last spoke to Scott that the CPC expected to discuss this case in July, but unfortunately one of our committee members had to step down, meaning that her cases (including yours) were moved to another. For that reason, the CPC did not discuss your case until our September 20 meeting.

Ultimately, the CPC feels that the concerns you raised are not an “ethics” issue. They felt that editors should have broad discretion to determine the scope of their journals, and they were not supportive of providing ethical scrutiny for an editor’s decision to accept or reject content in the absence of a strong indication of fraud, conflict of interest, or similar malfeasance—which they did not see in this case.

As you know, your complaint was signed by 10 voting members, meaning that referral to ExCom is mandatory. As such, the CPC’s recommendation is merely a recommendation, and there will still need to be a formal hearing on this case by the Executive Committee.

I plan to meet with our Executive Director to discuss the best way to proceed, and I will be in touch again soon with a better picture of what the next step will involve.

Best regards,

Tara

Tara L. Hoke

Staff Liaison, Committee on Professional Conduct

American Society of Civil Engineers

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Exhibit I
To Ethics Complaint
Amendment

SUPPLEMENT TO ETHICS COMPLAINT SUBMITTED 9/10/2018

Tara Hoke
General Counsel
American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, VA 20191

Committee on Professional Conduct
American Society of Civil Engineers
1801 Alexander Bell Drive
Reston, VA 20191

October 29, 2019

Dear Ms. Hoke and Members of the Committee:

We, the 12 complainants of the Ethics Complaint submitted against ASCE Members Roberto Ballarini and Kaspar Willam, are sending this letter in response to the email that Ms. Hoke sent to complainants Richard Johns and Scott Grainger on October 2, 2019. Please accept this letter as a formal supplement to the original Complaint. This letter contains six sections listed below, along with an attached appendix.

- Request for Reconsideration of the Case Page 1
- Providing a Basic Level of Ethical Scrutiny Page 2
- The Facts Unequivocally Demonstrate Violations of the Code of Ethics Page 3
- Information Providing a Strong Indication of Conflicts of Interest Page 6
- Request for Further Investigation by the CPC Page 9
- Requests in the Event of a Disciplinary Proceeding Page 11

Request for Reconsideration of the Case

We, the complainants, hereby request that the Committee on Professional Conduct (CPC) reconsider this case at the next meeting of the CPC and before referring it to the Executive Committee for a disciplinary proceeding. We respectfully find that the position reached by the CPC is gravely in error. We ask the CPC to reconsider this case based on (1) our rebuttal of the CPC's position, (2) the new information we are submitting that provides a strong indication of Ballarini's and Willam's conflicts of interest, and (3) the further investigation that we are urging the CPC to undertake.

As stated in the Complaint, our intention is not to pursue disciplinary action against the defendants but instead to undo the injustice done to Johns and Szamboti and to all users of the *Journal of Engineering Mechanics*. This goal can be accomplished through the enactment of a simple and obvious remedy: **Afford the Discussion Paper the technical, merit-based review to which it was entitled when Johns and Szamboti appealed Willam's May 2012 decision to reject the Discussion Paper on technical grounds.**

In hopes of reaching this outcome, we urge the CPC to fully discharge its duty to “exercise every means possible to resolve ethical questions and charges of professional misconduct through measures other than reference to the Executive Committee.” This may be accomplished by vigorously investigating the unknown facts of this case and by vigorously pursuing the enactment of our proposed remedy. To avoid further prolonging the resolution of this case, we ask that the investigation and the pursuit of enacting our proposed remedy be carried out in an accelerated manner following the next meeting of the CPC.

Providing a Basic Level of Ethical Scrutiny

Ms. Hoke’s description of the position reached by the CPC in her email dated October 2, 2019, was as follows:

Ultimately, the CPC feels that the concerns you raised are not an “ethics” issue. They felt that editors should have broad discretion to determine the scope of their journals, and they were not supportive of providing ethical scrutiny for an editor’s decision to accept or reject content in the absence of a strong indication of fraud, conflict of interest, or similar malfeasance—which they did not see in this case.

First, we agree that ASCE editors should have discretion to determine the scope of their journals. However, editorial discretion should not be so broad that it empowers editors to violate the canons set forth in the *ASCE Code of Ethics* or the ethical standards and publication processes set forth in *Publishing in ASCE Journals*.

Namely, while ASCE has a legitimate interest in protecting editorial discretion, an editor’s decision as to whether a submitted paper is within the scope of a journal should still be made in a manner that is truthful, fair, and consistent with ASCE publication processes. Not providing a basic level of ethical scrutiny to ensure that such decisions meet these standards will promote ethical misconduct by ASCE editors.

In many cases, the facts will fail to demonstrate that editors have acted in a manner that is untruthful, unfair, or inconsistent with ASCE publication processes. However, in some cases, as in this case, the facts *will* unequivocally demonstrate such misconduct, even if there is not a “strong indication” that an editor’s actions were driven by conflicts of interest or similar malfeasance.

In these cases, the actions of editors should still be subject to ethical scrutiny, and complainants should not have the burden of proving that the misconduct was driven by conflicts of interest or similar malfeasance, especially when “inference to the best explanation” leads one to conclude that an editor’s decision was likely driven by such factors.

The Facts Unequivocally Demonstrate Violations of the Code of Ethics

In the present case, the facts unequivocally demonstrate that Ballarini and Willam's "out of scope" decision was untruthful, unfair, and inconsistent with ASCE publication processes. These facts are as follows:

- 1) The Bažant Le Paper was published in the *Journal of Engineering Mechanics* in January 2011.
- 2) Johns and Szamboti submitted their Discussion Paper of the Bažant Le Paper by the deadline of May 31, 2011.
- 3) Willam, who was the only editor at that time, evidently determined the Discussion Paper was within the *Journal's* scope and sent it out for review.
- 4) The Discussion Paper underwent a lengthy peer review before being rejected on technical grounds on the basis of one reviewer's recommendation on May 31, 2012, exactly one year after it was submitted. Meanwhile, a separate discussion of the Bažant Le Paper by Crockett Grabbe was accepted for publication on August 11, 2011, a mere 70 days after it was submitted (also on May 31, 2011).
- 5) Johns and Szamboti submitted an appeal rebutting the reviewer's comments on June 7, 2012, and, **upon the request of the *Journal***, submitted a revised manuscript on June 19, 2012, nine days before the deadline of June 28, 2012. The revised manuscript naturally was accepted and was not returned for being "out of scope."
- 6) Ballarini was appointed coeditor of the *Journal of Engineering Mechanics* in the fall of 2012.
- 7) Crockett Grabbe's discussion of the Bažant Le Paper, along with a closure by Bažant and Le, was published in the *Journal's* October 2012 issue.
- 8) On October 5, 2012, ASCE Managing Editor Holly Koppel informed Johns and Szamboti via email that **Willam had previously assigned the revised manuscript to an associate editor for review. Koppel further informed Johns and Szamboti that she had sent an email query to the associate editor asking him for the status of his review.** (These facts were not highlighted in the original Complaint, but are documented in Exhibit H of the Complaint.)
- 9) On December 10, 2012, Johns emailed Koppel to inquire about the status of the review and the reason for the ongoing delay. Koppel did not respond to that inquiry, and Johns and Szamboti received no further information about the review that was underway as of October 5, 2012 (see Exhibit H of the Complaint).

- 10) On May 9, 2013, Ballarini told Johns and Szamboti via email that he would discuss their Discussion Paper with Willam the following day (see Exhibit I of the Complaint).
- 11) On July 8, 2013, Ballarini informed Johns and Szamboti via email that he had requested and received all papers, discussions, and reviews the *Journal* had received and published that were associated with the World Trade Center (see Exhibit J of the Complaint). Ballarini further told Johns and Szamboti he would read through what he received in the next week or so and that he would talk once more with Willam before making a decision. Ballarini also told Johns and Szamboti: “My objective is fairness, but as I stated previously, with the intention of ending what could potentially be a never ending discussion of this topic (the *Journal* is not the appropriate venue for such ongoing discussions).”
- 12) On August 9, 2013, Koppel informed Johns and Szamboti via email that their Discussion Paper was rejected because it was “out of scope.”

As noted in Point #57 of the Complaint and in Szamboti’s email to Ballarini dated July 8, 2013 (see Exhibit J of the Complaint), it would be a reasonable act of editorial discretion for Ballarini to reject any *future* submissions on the collapse of the World Trade Center buildings. However, the decision to reject Johns and Szamboti’s Discussion Paper (first submitted on May 31, 2011, and resubmitted on June 19, 2012) as “out of scope” was unambiguously untruthful, unfair, and inconsistent with ASCE publication processes.

The original Complaint outlines many reasons why Ballarini and Willam’s “out of scope” decision was untruthful, unfair, and inconsistent with ASCE publication processes, but these are the most essential reasons:

- 1) The Discussion Paper was a direct response to and critique of a paper that had already been published by the *Journal*, making it unambiguously within the *Journal’s* scope. Both the original Discussion Paper and the revised manuscript were submitted by the required deadlines.
- 2) Upon receiving Johns and Szamboti’s submissions, Willam considered both the original Discussion Paper and the revised manuscript to be within the scope of the *Journal* and sent them out for review. *Publishing in ASCE Journals* only provides for editors to “return the paper without review because the paper is outside the scope of the journal” **upon initial review** and provides **no such option in the case of appealed review decisions** (see pages 17 and 18 of *Publishing in ASCE Journals*). To reject a paper as “out of scope” after it has been sent out for review twice and held in review for more than two years is profoundly untruthful, unfair, and inconsistent with ASCE publication processes.
- 3) *Publishing in ASCE Journals* provides on page 7, under the section titled “Obligations of Editors,” that “If an editor is presented with convincing evidence that the substance, conclusions, references or other material included in a manuscript

published in an ASCE journal are erroneous, the editor, after notifying the author(s) and allowing them to respond in writing, shall facilitate immediate publication of an errata. **If possible, an editor shall also facilitate publication of appropriate comments and/or papers identifying those errors.**” [Emphasis added.]

While Willam and Ballarini might claim they were not presented with convincing evidence that the Bažant Le Paper was erroneous, they should have at least shown concern about establishing the validity of Johns and Szamboti’s criticisms — which they did not — and they should have rejected the Discussion Paper only on technical grounds. Given the nature of Johns and Szamboti’s criticisms of the Bažant Le Paper, rejecting the Discussion Paper as “out of scope” constitutes a gross violation of the aforementioned ethical obligation.

- 4) The “out of scope” decision was grievously unfair because a separate discussion of the Bažant Le Paper by Crockett Grabbe was considered to be within the scope of the *Journal*, even though Grabbe’s discussion was not more relevant to the Bažant Le Paper than Johns and Szamboti’s Discussion Paper. Moreover, Grabbe’s discussion was accepted for publication a mere 70 days after being submitted. Johns and Szamboti did not receive a decision until exactly one year after their initial submission and then waited **an additional 14 months** to receive a decision on their revised manuscript.

Ballarini and Willam’s “out of scope” decision is so egregiously untruthful, unfair, and inconsistent with ASCE publication processes that “inference to the best explanation” based solely on their documented actions strongly suggests their actions were motivated by non-technical considerations.

For example, if there were technical deficiencies in the revised manuscript, Willam and Ballarini would have simply rejected it on technical grounds, perhaps citing any comments of the associate editor who, as of October 5, 2012, had been assigned to review the revised manuscript. Given the “out of scope” decision, the revised manuscript was almost certainly *not* found to have technical deficiencies, or it would have been rejected on technical grounds.

Alternatively, if Ballarini’s editorial objective were truly “fairness” but “with the intention of ending what could potentially be a never ending discussion of this topic,” he would have simply facilitated the technical review of the revised manuscript, published it if it passed review, and then rejected as “out of scope” any future submissions on the World Trade Center buildings. Instead, he and Willam chose a course of action that was certain to feel flagrantly unfair to Johns and Szamboti, while also being wantonly untruthful and in violation of ASCE publication processes. These are not the actions of an editor merely seeking to exercise reasonable editorial discretion.

By far the most likely explanation for these actions — including the “out of scope” decision but also the unexplained failure of the *Journal* to complete the technical review of the revised manuscript in the fall of 2012, among others — is that Ballarini and Willam were motivated by non-technical considerations.

Information Providing a Strong Indication of Conflicts of Interest

We, the complainants, should not have the burden of proving that Ballarini's and Willam's violations of the *ASCE Code of Ethics* were driven by conflicts of interest or similar malfeasance, only that such violations were committed. Thus, we did not care to speculate on their motivations in the original Complaint.

However, should the CPC continue to maintain that a strong indication of conflict of interest is needed in order to find that the *ASCE Code of Ethics* was violated (as stated in Ms. Hoke's email dated October 2, 2019), below we present new information that, when considered alongside Ballarini's and Willam's documented actions, should leave no doubt in the mind of any reasonable person that their actions were driven by conflicts of interest.

We have divided the information indicating their conflicts of interest into three categories. These categories and the facts contained in them are not listed in any order of importance. References are contained in the attached appendix.

- 1) Ballarini's and Willam's Relationships to Bažant and Le
- 2) Bažant's Relationship to the *Journal* and to the Engineering Mechanics Institute
- 3) Willam's Role on the NIST World Trade Center Investigation

1) Ballarini's and Willam's Relationships to Bažant and Le

Ballarini and Willam each had longstanding professional relationships with Bažant, and Ballarini had an active (and still ongoing) professional relationship with Le.

As shown below, Ballarini's professional relationship with Le was so close during the time that Johns and Szaboti's Discussion Paper was under review that Ballarini should have recused himself from reviewing the Discussion Paper, as required by the fifth provision under "Obligations of Editors" in *Publishing in ASCE Journals*: "An editor should avoid conflicts of interest and/or the appearance thereof." (See page 7 of *Publishing in ASCE Journals*)

It should be noted that the facts presented below likely do not present the full picture of the relationships between these four individuals. These are merely the facts that the complainants could compile in a few hours of searching online.

Willam's Relationship to Bažant

- a) Bažant co-authored the preface to a 2004 special issue of *The International Journal of Engineering Science*, titled "Damage and Failure Analysis of Materials," which contained papers presented at a workshop held in honor of Willam's 60th birthday, organized by Willam's co-workers including those at Northwestern University, where

Bažant worked at the time. The preface is mostly devoted to telling the story of Willam's career. (Appendix pages 1 to 7)

- b) Bažant and Willam served together on the organizing committee of FRAMCOS-2 in 1995, a proceeding of the Fracture Mechanics of Concrete Structures journal, as well as the ACI-ASCE Committee 447 Finite Element Analysis of Reinforced Concrete Structures. (Appendix pages 8 to 10)
- c) Willam served as the second chair of the symposium in honor of Bažant's 80th birthday at the ASCE EMI Conference on June 5, 2017. (Appendix pages 11 and 12)

Ballarini's Relationship to Bažant

- d) Ballarini received his masters degree in 1981 and his Ph.D. in 1985 from Northwestern University. Bažant was a professor of civil engineering at Northwestern University during this period. (There is no evidence that Bažant was a direct advisor to Ballarini, but presumably they came to know each other during Ballarini's years at Northwestern.) (Appendix pages 13 and 33)
- e) Ballarini co-authored a paper, "Report on ONR Workshop on Fracture Scaling," *International Journal of Fracture*, with Bažant in 2002. (Appendix page 19)
- f) Ballarini gave an invited talk, "Distributed Damage Creates Flaw Tolerance," at the Symposium Honoring the 75th Birthday of Bažant at the 49th Annual Meeting of the Society of Engineering Science on October 10, 2012. At this point in time, Ballarini had just been appointed editor of the *Journal of Engineering Mechanics* and Johns and Szamboti's Discussion Paper was under review. Ballarini also gave an invited talk, "Fracture Mechanics-Based Design of Anchor Bolts," at the symposium in honor of Bažant's 80th birthday at the ASCE EMI Conference on June 5, 2017. (Appendix pages 11, 12, 22, and 24)

Ballarini's Relationship to Le

- g) Le was hired as an associate professor in the Department of Civil, Environmental, and Geo-Engineering at the University of Minnesota in September 2010 while Ballarini was the chair of the department (presumably Ballarini was involved in Le's hiring). Ballarini remained at the department and was a superior/co-worker of Le's throughout the entire period that Johns and Szamboti's Discussion Paper was under review. (Appendix pages 13 and 39)
- h) Ballarini and Le co-authored three papers between 2013 and 2014. The first, "Effect of stress singularities on scaling of quasibrittle fracture," *Proceedings of 13th International Conference of Fracture*, was published in June 2013. This was during the time that Johns and Szamboti's Discussion Paper was under review and that Ballarini was personally looking into the review process. The second, "A finite weakest link model of failure statistics of polycrystalline silicon MEMS devices," *Proceedings of ASME International Mechanical Engineering Congress and*

Exposition, was published in November 2013, three months after Ballarini rejected Johns and Szamboti's Discussion Paper as out of scope. The third, "Effect of stress singularity magnitude on scaling of strength of quasibrittle structures," was published in the *Journal of Engineering Mechanics* in January 2014, less than six months after Ballarini rejected Johns and Szamboti's Discussion Paper as out of scope from the same journal. (Appendix pages 42, 43, and 46)

- i) Le is now an associate editor of the *Journal of Engineering Mechanics*, where Ballarini continues to be the chief editor and where Johns and Szamboti are seeking to have their Discussion Paper of the Bažant Le Paper rightfully published. (Appendix pages 50 to 52)

It must be noted that Ballarini's ongoing professional relationship with Le and Le's position as an associate editor of the *Journal* may have at least partially motivated Ballarini in the fall of 2018 to refuse the simple and obvious remedy proposed in this Ethic Complaint. As discussed below, these factors raise the question of whether Ballarini should have unilateral power to decide on adopting our proposed remedy.

2) Bažant's Relationship to the *Journal* and to the Engineering Mechanics Institute

As documented in the Complaint, Bažant had a close and longstanding relationship with the *Journal of Engineering Mechanics* and with the Engineering Mechanics Institute (EMI). In addition to serving as the *Journal's* chief editor from 1988 to 1994 and publishing more than 120 papers in the *Journal* (see Point #69 of the Complaint), Bažant's relationship with the *Journal* went as far as having inappropriate communications with one of the reviewers of the Bažant Le Paper, George Voyiadjis, a member of the *Journal's* editorial advisory board from 2005 to 2010 (see Exhibit P of the Complaint). Authors are not supposed to know who is reviewing their papers and should not be in discussion with reviewers while the review is taking place.

It is also notable that Ballarini and Willam were photographed in Bažant's company (with Willam and Bažant standing next to each other) at the 2013 EMI annual meeting at Northwestern University, the same gathering where Ballarini and Willam reportedly discussed how to handle Johns and Szamboti's Discussion Paper (see Exhibit O of the Complaint). Ballarini was also photographed giving an award to Bažant at the 2015 EMI International Conference in Hong Kong. (Appendix page 55)

3) Willam's Role on the NIST World Trade Center Investigation

Willam was awarded a contract by the National Institute of Standards and Technology (NIST) to provide "technical expertise and assistance for analysis of the structural response of the impact-damaged WTC 1 and 2, and of WTC 7, to uncontrolled fires," and was subsequently credited for his work in NIST's *Final Report on the Collapse of the World Trade Center Towers*. (Appendix pages 56 to 58)

Willam's role as an independent contractor on the NIST World Trade Center Investigation appears to have conflicted significantly with his responsibility to "ensure an

efficient and fair review” of Johns and Szamboti’s Discussion Paper, stemming from the fact that their Discussion Paper ultimately challenges NIST’s account of the World Trade Center failures.

Although the NIST report and the Bažant Le Paper are separate and distinct documents, they in fact constitute two critical and interdependent parts of the progressive collapse theory regarding the World Trade Center Towers. They are interdependent parts of the progressive collapse theory because the NIST report attempts to explain how the collapses initiated but does not attempt to explain how vertical collapse ensued, while the Bažant Le Paper attempts to explain how vertical collapse ensued but does not attempt to explain how the collapses initiated. The NIST report, published in 2005, states, “The focus of the Investigation was on the sequence of events from the instant of aircraft impact to the initiation of collapse for each tower,” and concedes that NIST performed “little analysis of the structural behavior of the tower after the conditions for collapse initiation were reached.” In a supporting volume of its report, NCSTAR 1-6, NIST cites an earlier paper coauthored by Bažant as explaining how vertical collapse ensued and states its agreement with Bažant’s paper. (Appendix pages 56 and 59 to 62)

Therefore, publishing a Discussion Paper that showed the Bažant Le Paper to be erroneous — so erroneous that using the correct input values in the analysis produces the opposite computational result, which is that the fall of WTC 1’s upper section would have arrested after approximately 3 seconds in a natural collapse — would have effectively disproved the NIST report and the progressive collapse theory to which Willam was a contributor.

We accept that it would have been conceivable for someone in Willam’s position to “ensure an efficient and fair review” of Johns and Szamboti’s Discussion Paper. Therefore, we are not contending that Willam should necessarily have recused himself solely on the basis of being a contractor on the NIST World Trade Center Investigation.

However, the facts demonstrate unequivocally that Willam did not “ensure an efficient and fair review,” that he did not “give unbiased consideration to all manuscripts offered for publication,” and that he did not “facilitate publication of appropriate comments and/or papers identifying [the Bažant Le Paper’s] errors.” (See *Publishing in ASCE Journals*, “Obligations of Editors,” pages 6 and 7.)

Using “inference to the best explanation,” Willam’s professional association with the NIST report and the progressive collapse theory was very likely a motivating factor in his failure to fulfill his obligations as an editor.

Request for Further Investigation by the CPC

As part of reconsidering this case, we respectfully ask the CPC to investigate and find answers for the following questions:

- 1) Why exactly did it take the *Journal* 70 days to review and accept Crockett Grabbe's (in our view) grossly deficient discussion of the Bažant Le Paper, but 365 days to review and reject Johns and Szamboti's Discussion Paper?
- 2) Who was the reviewer of the Discussion Paper, and did this reviewer have any known conflicts of interest with the Discussion Paper? (The identity of the reviewer does not need to be disclosed to the complainants, but the CPC should establish who the reviewer was and whether the reviewer had a known conflict of interest.)
- 3) Perhaps more important than any other set of questions, when did Willam assign the revised manuscript to the associate editor, who was the associate editor, did the associate editor have any known conflicts of interest, and why did nothing come of the associate editor's review that was reportedly underway as of October 5, 2012? We strongly urge the CPC to interview Holly Koppel in order to determine the identity of the associate editor and to gather any other information she may have regarding the review process.
- 4) Did Ballarini consider recusing himself when he learned that his close colleague, Jia-Liang Le, was a coauthor of the original paper being critiqued in Johns and Szamboti's Discussion Paper? Why did Ballarini not recuse himself?
- 5) Why did Ballarini — who appears to have assumed control of the review in the spring of 2013 — simply not take the path of least resistance and facilitate the appropriate technical review of the revised manuscript, even despite his stated agenda that the *Journal* stop publishing papers on the World Trade Center buildings? Was he aware that the Discussion Paper had been submitted by the required deadlines? If he was aware of that fact, why did he proceed with rejecting the paper as “out of scope” — an obviously untruthful and unfair action that was wholly inconsistent with ASCE publication processes?
- 6) Did Ballarini, Willam, the associate editor, the reviewer, or any other individual involved in the review of Johns and Szamboti's Discussion Paper ever speak with Bažant or Le about the Discussion Paper during the review process, and, if so, what was the nature of those discussions?

Turning from the CPC's investigatory function to its duty to “exercise every means possible to resolve . . . charges of professional misconduct through measures other than reference to the Executive Committee,” we ask the CPC to address the following:

- 7) In light of his past actions and his relationship to Le, who is now an associate editor of the *Journal*, does the CPC believe that Ballarini should have unilateral power to decide on adopting our proposed remedy?
- 8) Should the case instead be brought to the EMI Board of Governors to decide on a course of action that will guarantee Johns and Szamboti the unbiased technical review to which they are entitled? In that event, should measures be taken to remove from the decision-making process any members of the EMI Board of Governors who have

known or apparent conflicts of interest and to ensure that the Discussion Paper is reviewed by an associate editor without any known or apparent conflicts of interest?

- 9) Or should the case instead be brought to the Executive Committee or the Board of Direction to decide on a course of action that will guarantee Johns and Szamboti the unbiased technical review to which they are entitled?

We implore the CPC to vigorously investigate the unknown facts of this case and to vigorously pursue a course of action that leads to the enactment of our proposed remedy — which is the only way to undo the injustice done to Johns and Szamboti and to all users of the *Journal of Engineering Mechanics*.

Requests in the Event of a Disciplinary Proceeding

In the event that the CPC does not change its position and that this case is referred to the Executive Committee, we kindly request the following:

- 1) We insist that we be allowed to make opening and closing statements and to present evidence, since the case will have been referred to the Executive Committee on our behalf and there will effectively be no party prosecuting the case if we are not permitted to participate actively.
- 2) We request to know in advance if the Executive Committee will have the power to effectuate our proposed remedy if it finds that Ballarini and/or Willam violated the *ASCE Code of Ethics*. We note that it would make little sense to punish the defendants for violating the *Code of Ethics* while at the same time not undoing the injustice that can be easily undone by effectuating the proposed remedy.
- 3) We would like to request any and all documentation related to the CPC's investigation and discussion of the case. Is there a formal written position by the CPC? Are there minutes from the September 20 meeting or any other meeting in which the Complaint was discussed? Is there documentation regarding any interviews conducted by the CPC or emails obtained by the CPC? Would the CPC please provide all of the above?

We thank you for your ongoing service to ASCE and to this important ethics case.

Sincerely,

Richard Johns
Tony Szamboti
M. Fadhil Al-Kazily, Ph.D., P.E., LM.ASCE
Scott Grainger, P.E., F.SFPE, LM.ASCE
Michael Herzig, P.E., LM.ASCE
Nathan Lomba, P.E., S.E., LM.ASCE/SEI

Seth McVey, EIT, M.ASCE
Kamal Obeid, P.E., S.E., M.ASCE
Oswald Rendon-Herrero, Ph.D., P.E., LM.ASCE
Robert Sogge, P.E., Ph.D., M.ASCE
Frank Stratton, Ph.D., P.E., F.ASCE, LM.ASCE
William Sublette, Ph.D., P.E., M.ASCE

Cc: Thomas W. Smith III, Executive Director, ASCE

APPENDIX:
INFORMATION REGARDING
CONFLICTS OF INTERST

International Journal of Engineering Science

Editor-in-Chief A. CEMAL ERINGEN

SPECIAL ISSUE

DAMAGE AND FAILURE ANALYSIS OF MATERIALS

Guest Editors: Zdeněk P. Bažant, Ignacio Carol and Paul Steinmann



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Page 1

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DAMAGE AND FAILURE ANALYSIS OF MATERIALS

Guest Editors:

Zdeněk P. Bažant
Evanston, IL, USA

Ignacio Carol
Barcelona, Spain

Paul Steinmann
Kaiserslautern, Germany

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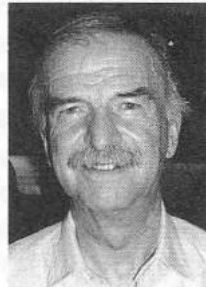
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Preface



Kaspar Willam

This special issue contains most of the papers which were presented at the workshop “Deterioration Analysis of Materials at Various Scales of Observation”, which was held in honor of Kaspar Willam on the occasion of his 60th birthday at the Soellerhouse in Hirscheegg, Austria, March 25–28, 2001. The workshop was organized by his co-workers at Northwestern University (Evanston, Illinois, USA), Universität Kaiserslautern (Germany) and Technical University of Catalonia (UPC, Barcelona, Spain), with partial financial support from Electricité de France and the School of Civil Engineering (ETSECCPB) in Barcelona, Spain. The Soellerhouse facility was made available by the University of Stuttgart, thanks to Ekkehard Ramm and his co-workers.

Born in Vienna, Austria, on December 20, 1940, Kaspar Willam graduated in civil engineering at Vienna University of Technology in 1964. He continued his studies at the University of California, Berkeley, where he received his Ph.D. degree in 1969 with a dissertation on Finite Element Analysis of Box Girder Bridges under the advisorship of Alex Scordelis.

After a brief postdoctoral term at the University of California Berkeley, he joined the Institute for Statics and Dynamics of the University of Stuttgart in 1970, which was at that time directed by John H. Argyris. He worked there as a Group Leader on prestressed concrete reactor pressure vessels and on computational aspects of elastic and inelastic materials in general. In 1980 he became “Universitätsdozent” for Structural Mechanics in Aeronautical and Aerospace Engineering.

In 1981 he joined the University of Colorado, Boulder, where he spent most of his academic and scientific career, except for the two-year period 1988–1990, when he was Professor and Head of the Department of Civil Engineering. During this period he taught a great variety of undergraduate and graduate courses in structural mechanics and

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materials. He directed a number of major research projects which were funded among others by NSF, AFOSR, WES, DFG, FHWA, CASI and the European Commission. The projects covered a wide range of topics related to constitutive modeling of engineering materials and localized failure analysis in static and dynamic environments using finite elements.

He has been active as a Member and Fellow of a number of professional societies organizations, including ASCE, ACI, ASME and USACM. He chaired for many years ASCE-ACI Joint Committee 447 on "Finite Element Analysis of Reinforced Concrete Structures". He is a member of the editorial board of several international journals. He has authored over 150 refereed publications, and delivered over 100 invited lectures and presentations at scientific and technical meetings. Over the last 25 years he organized and chaired a great number of sessions at international symposia and annual conventions of ACI, ASCE, ASME, and USACM. He co-chaired the fifth US National Congress for Computational Mechanics which took place in Boulder in 1999. He received the prestigious Alexander von Humboldt Award (Bonn-Bad Godesberg).

Kaspar Willam has made significant contributions to mechanics of materials which have become mandatory reference to many of us. Since the early times of multiaxial modeling of concrete for nuclear reactors, he and his co-workers have proposed a number of constitutive formulations of the elasto-plastic type. Widely known is the "Willam-Warnke" five-parameter model of a three invariant failure envelope (1975) [1], the fracture-energy based "Pramono-Willam" model (1989) [2], the "Extended Leon Model" with Etse (1990) [3], (1994) [4], and the "Three-Parameter Concrete Model" with Menétrey (1995) [5], as well as the most recent extension by a cap with Kang (1999) [6]. In the last decade, his contributions moved from plasticity towards isotropic and anisotropic damage formulations, which included a general framework for elastic degradation (1994) [7], consideration of spurious dissipation in stiffness recovery (1996) [8], stability of multiple dissipation processes (1996) [9], and the recent "Pseudo-Rankine" model developed in collaboration with Carol and Rizzi (2001) [10]. The current state-of-the art in constitutive modeling of engineering materials was summarized in the encyclopedic review article published by Academic Press in (2002) [11].

The problems of cracking, localization, finite element objectivity and regularization procedures have been a fundamental component of Willam's work since the emergence of these issues in the early 1980s. Among his original contributions along this line, one should mention his "Composite Fracture Model" (1984) [12], (1984) [13], (1986) [14], his assessment of the fundamental concepts underlying the fixed and rotating crack models (1989) [15], and several studies of localization indicators at material, element and structural levels (1987) [16], (1991) [17], (1996) [18], and (2000) [19]. One particular proposal, that has become well known, is the fixed vs rotating smeared crack test of isotropic and anisotropic softening models (1989) [15], which consists of a load stage of constant tension up to peak strength, which is followed by a second load stage of increasing tension-strain with proportions $(\epsilon_{xx}, \epsilon_{yy}, \epsilon_{xy}) = (1 : 1.5 : 1)$. This non-proportional load history results in a gradual increase of the principal tensile strains in which the principal axes first rotate fast and then slowdown progressively until an angle of 52° is reached asymptotically. This test, colloquially known as the "Willam Test", has become one of the standard benchmarks for anisotropic softening models of quasi-brittle materials proposed in the literature.

Other theoretical and numerical research topics in which Willam made significant contributions include micropolar continua, finite deformation elasto-plasticity and integration algorithms for multiple surface plasticity models. In micropolar continua, the work with his former students Paul Steinman, Andreas Dietsche and Maria-Magdalena Iordache includes an extension of von Mises

and Drucker-Prager plasticity to Cosserat continua (1995) [20], an extension of the traditional localization analysis based on the acoustic tensor by a second localization condition (1991) [21], and a novel proposal (1998) [22] of a Mohr circle for non-symmetric stress when the origin of Mohr's circle is no longer positioned on the horizontal σ -axis (unlike the case of Boltzmann continua).

Micromechanical simulations of material specimens, which are nowadays emerging as a powerful tool for material analysis and design, were early on pioneered by Kaspar Willam (1989) [23], and led to the prominent doctoral thesis of Thomas Stankowski at the University of Colorado Boulder [1991]. In this study, concrete was idealized by an arrangement of numerically generated particles representing coarse aggregates, embedded in a contiguous matrix representing the mortar and fine aggregates. The particles were assumed to behave as linearly elastic, while the matrix was elasto-plastic, and the interface between them was modeled via elasto-plastic zero-thickness interfaces. The plastic zones in the matrix would lead to specimen failure with mode I patterns in tension, and shear band patterns in compression. These pioneering results were confirmed by later experimental work, and by other numerical results using similar geometries but alternative models for crack formation and development.

Although not central to Willam's work, experimental studies have also been germane to his contributions, including concrete testing in direct tension and triaxial compression (1986) [24], (1989) [25], and ultrasound measurements of progressive damage in concrete specimens (1995) [26], (1996) [27].

Finally, but not of lesser importance to all those who have interacted with Kaspar, is his personal and human side. Always friendly and smiling, never one single word too sharp, Kaspar can make those around him feel better and encourage hard work. Perhaps one of his main non-technical interests are mountains and skiing. Mountains and snow have been always present in his life—in his native country of Austria, when his family moved during World War II from Vienna to Bezau in the high mountains of Vorarlberg, and in his subsequent move to beautiful Colorado, where the snow compares with dry champagne and the skies are blue. In connection with technical events, many of us have shared great ski outings with him, hiking Breckenridge's Peaks 7 and 8, going down the untouched snows of British Columbia or Utah after ACI Conventions, or participating in the 'social' ski races of the EURO-C's in Austria. No doubt, these great times when skiing was often combined with technical exchanges on the chairlift or in the mountain cafe, have been the motivation for organizing this workshop in honor of his 60th birthday anniversary in the mountains of his beloved Austria.

The workshop has been a success as demonstrated by this special issue of IJES. The group who participated and many others who could not do so are all grateful of having had the opportunity to interact with Kaspar during all these years. We all look forward to many more such meetings of productive technical and non-technical exchange in the future.

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SCALING THEORIES FOR QUASIBRITTLE FRACTURE: RECENT ADVANCES AND NEW DIRECTIONS

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Fracture Mechanics of Concrete Structures

Volume I

Edited by
Folker H. Wittmann

Abstract

A review of the basic theories of scaling in solid mechanics is presented. The problem of scaling is approached through dimensional analysis, laws of thermodynamics and asymptotic matching. Definitive conclusions on the relative importance of various sources of size effect (energy release, Weibull statistics, and crack fractality) are drawn. The size effect laws for crack initiation from smooth surface and for both cracked and uncracked specimens are presented. A simpler, one-size version of the size effect method of fracture energy testing is proposed. Finally, promising research directions are pointed out.

1 Introduction

Scaling is the most fundamental property of every physical theory. In structural mechanics, however, little attention has been paid to the scaling of failure and until about a decade ago it has been generally assumed that the observed size effect on nominal strength of structures must always be explained by the randomness of strength. Detailed analysis shows, however, that this scaling theory does not

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capture the main cause of size effect for quasibrittle materials such as concrete, sea ice, rocks, tough ceramics and composites which exhibit a large fracture process zone and allow stable growth of large cracks prior to failure. Rather, the dominant source of size effect appears to be deterministic and consists in the release of stored energy and the associated stress redistribution.

A historical discussion of the size effect in concrete must begin with the work of Walsh (1972) who made the plot of logarithm of nominal strength versus logarithm of the size of similar fracture specimens that he tested and observed that the plot deviated significantly from the slope $-1/2$ required for linear elastic fracture mechanics (LEFM). He and others (e.g., Kesler et al., 1971) concluded from such deviations that fracture mechanics does not apply, but what they meant was LEFM, the only kind of fracture mechanics available at that time for nonductile materials. In 1983, a simple, approximate size effect law (Bazant 1983, 1984) was proposed and derived theoretically to describe the aforementioned size effect plot. This law subsequently received extensive and diverse justifications, including: (1) comparisons with tests of notched fracture specimens as well as unnotched reinforced concrete structures, (2) derivation based on energy release arguments and dimensional analysis, (3) comparison with discrete element (random particle) numerical model for fracture, (4) derivation as a deterministic limit of a nonlocal generalization of Weibull statistical theory of strength (Bažant and Xi, 1991), (5) comparison with finite element solutions based on nonlocal model of damage. The simple size effect law has been shown useful for incorporation into the design formulas for load capacity in various brittle modes of failure of reinforced concrete structures, as well as for evaluation of material fracture characteristics from tests. Significant contributions to the study of size effects have been made by Carpinteri (1986), Planas and Elices (1988 a, b) and others (e.g. van Mier, 1986).

The present lecture, after a brief review of the current status, will focus on presenting several recent advances made at Northwestern University, concerned with the asymptotic theory of the size effect, the possible role of the fractal nature of crack surfaces in the size effect (already discussed for concrete by Carpinteri et al., 1993, 1995; Carpinteri, 1994; Lange et al., 1993, and Saouma et al., 1990, 1994), and extension of the size effect law to failures at crack initiation from a smooth surface. Some implications for a new simplified size effect testing method for fracture characteristics will be also indicated, and the size effect predicted by the alternative Weibull-type statistical theory of strength will be put in perspective.

ACI-ASCE Committee 447
Finite Element Analysis of Reinforced Concrete Structures
Meeting at ACI Spring Convention, Denver, CO
Tower Room C

Monday, November 6, 11:30am-2:00pm

Minutes

1. Introductions

Members Present: Laura Lowes (University of Washington)
Sarah Billington (Stanford University)
Dan Palermo (University of Ottawa)
Christian Meyer (Columbia University)
Walter Gerstle (Univ. of New Mexico)
Riadh Al-Mahaidi (Monash University)
Tulio Bittencourt (University of Sao Paulo)
Nilanjau Mitra (Cal Poly San Luis Obispo)
Song Jan (Bechtel Corp)
John Jakovich (DYK Incorporated)
Kaspar Willam (U. Colorado- Boulder)
Zdenek Bazant (Northwestern Univ)

Visitors: Tomasz Lutomirski (Univ. of Nebraska - Lincoln)
Y.L. Mo (Univ. of Houston)
Piotr Paczkowski
Allan Bommer (Bentley Systems, Inc.)
Rafael de Souza
Max Hendricks (TNO-DIANA)
George Charitou (EllisDon Corporation)
Eric Williamson (U. Texas – Austin)
Robert Barnes (Auburn University)
Will Lindquist (University of Kansas)
Zeynep Firat Alemdar (University of Kansas)
Mehrdad Sasani
Tom Harmon (Washington University)

2. Review and approve minutes from previous meeting: ACI Spring Convention, Charlotte, NC March 2006.

Approved with editorial corrections

3. Announcements

None.

4. Report of publication of SP-237: Proceedings of US-Japan Workshop on Finite Element Analysis of Reinforced Concrete Structures, Hawaii, November 2003 (Lowes)

Currently on sale from ACI (in CD format only)



EMI 2017

Engineering Mechanics Institute Conference

June 4-7, 2017, San Diego



Monday, June 5

9:30 - 9:50	9:50 - 10:10	10:10 - 10:30	10:30 - 10:50	10:50 - 11:10	11:10 - 11:30	11:30 - 11:50
Room: Salon A MS 1						
Symposium in honor of Prof. Zdeněk P. Bažant on the occasion of his 80th birthday						
First Chair: Herbert Mang Second Chair: Kasper J William						
On a kinematics-based hypothesis for a breakdown of the strain energy.	A Three Invariant Formulation for Steel Behavior: Experimental Observations and Constitutive Models.	Le Chatelier's Conjecture - OR- Measurement of Colloidal Stresses.	Structural Testing at the Micro and Nano Scales.	Ultrasonic Nondestructive Evaluation of Alkali-Silica Reaction Damage in Concrete Prism Samples.	Multiscale Mechanics and Modeling of Concrete Damage Processes.	Time-Scaling in Atomistics and the Rate-Dependent Mechanical Behavior of Nanostructures.
Herbert Mang*	Kasper J William*, Francesco Di Simo, Reza Mousavi, Giovanna Xotta	Franz-Josef Ullm*, Roland Pellenq, Muhammad Abuhalkal	Roberto Ballarini*	Jianmin Qu*, Taeho Ju, Jan Achenbach, Laurence Jacobs, Maria Guimaraes	J. S. Chen*, Michael Hillman	Pradeep Sharma*
9:30 - 9:50	9:50 - 10:10	10:10 - 10:30	10:30 - 10:50	10:50 - 11:10	11:10 - 11:30	
Room: Salon B MS 61						
Computational Geomechanics						
First Chair: Waiching Sun Second Chair: Shahrzad Rostankehah						
A critical assessment on phase field and eigen-erosion modeling of fractures in anisotropic fluid-infiltrating porous medias.	Laboratory Hydraulic Fracture in Shale.	Modeling hydraulic fracturing with a pressure dependent cap model and peridynamics.	Numerical modeling of subsidence induced by hydrocarbon production in southern Louisiana.	Dynamic fracture simulation of inhomogeneous rock.	Investigation of shear bands and the microscopic origin of macroscopic strength in granular materials.	
Waiching Sun*, Kun Wang, Jinhyun Choo, SeonHong Na	Shahrzad Rostankehah*, Jose E. Andrade, Vito Rubino, Gioacchino Viggiani, Edward C. G. Ando, Tengtattini Alessandro, Ares Rosakis	John T. Foster*, Jason York	Yaneng Zhou*, George Z. Voyiadjis	Bahador Bahmani*, Philip L. Clarke, Reza Abedi, Bahador Bahmani	Reid Kawamoto*, Jose Andrade	
Room: Salon C MS 21						
Computational Methods and Applications for Solid and Structural Mechanics						
First Chair: Timothy Truster Second Chair: Caglar Oskay						
[Keynote] Computational Framework Involving Spatial and Temporal Multi-Scaling for Coupled Transient Electromagnetics-Mechanical Phenomena.	Incremental-secant mean-field-homogenization method for elasto-visco-plastic materials systems.	Adaptive multiscale homogenization of discrete models to continuum with application to concrete.	Multi-scale computational framework for Modeling of Open-cell Foams.	An Automated Framework for the Computational Modeling of Materials with Complex Microstructures.		
Somnath Ghosh*, Shu Guo, Reza Yaghmaie	Ling Wu*, Benoit Bidaire, Laurent Adam, Maxime Melchior, Issam Doghri	Roozbeh Rezaekhan*, Gianluca Cusatis	Ruishen Lou*, Xiaowo Wang, Hui Liu, Arun Prakash	Sohell Soghrati*, Anand Nagarajan, Bowen Liang, Fei Xiao, Hossein Ahmadian		
Room: Salon D MS 22						
Computational Modeling in Civil Engineering						
First Chair: Chansseok Jeong Second Chair: Ertugrul Taciroglu						
Soil-Structure Interaction Modeling of Building Structures: Substructure analyses vs. finite element simulations using mechanics-based nonlinear models.	Stiffness-Matrix Coupling Method For Surface Foundations Interacting With Pile Groups	Validation of a Multi-Axial Inelastic Soil Model for Wave Propagation Analyses Using Centrifuge Experiments.	A Mathematical Approach for Modeling Pile-Soil-Pile Interaction for Laterally Loaded Pile Groups in a Linear Elastic Medium.	A Fiber-Based Model for Soil-Abutment Interaction for Skew Bridges.		
Dario Kusanovic*, Hamed Ebrahimiyan, Dominik Asimaki	Josue Labaki*, Euclides Mesquita	Wenyang Zhang*, Wenyang Zhang, Elnaz Esmaeilzadeh Seylabi, Ertugrul Taciroglu	Volkan İşbuğa*	Arastoo Dasmeh*, Ertugrul Taciroglu		

Curriculum Vitae

Name: **Roberto Ballarini, Ph.D., P.E., F.ASCE, F.EMI**
Registered Professional Engineer, State of Texas, No. 99081

Citizenship: U.S.A.

Education:
Ph.D. 1985 **Northwestern University, Civil Engineering**
M.S. 1981 **Northwestern University, Civil Engineering**
B.E. 1980 City College of New York, Civil Engineering

Employment:
9/14-present **University of Houston**
Thomas and Laura Hsu Professor and Chair, Department of Civil and Environmental Engineering
7/06-9/14 University of Minnesota
James L. Record Chair (Head '07-'12), Department of Civil Engineering
(courtesy appointments in the Departments of Biomedical Engineering, Mechanical Engineering, Chemical Engineering and Materials Science)
8/86-7/06 Case Western Reserve University
Leonard Case Jr. Professor of Engineering ('04-'06)
Professor of Civil Engineering, Mechanical and Aerospace Engineering, Materials Science and Engineering ('97-'03)
Associate Professor ('92-'97)
Assistant Professor ('86-92)
7/03-6/04 Franklin W. Olin College of Engineering
F.W. Olin Professor of Mechanical Engineering
7/85 -7/86 Cleveland State University
Assistant Professor of Civil Engineering
1/85-7/85 Shell Development Company, Houston, Texas
Associate Research Engineer

Sabbatical Leaves and Invited Visits

University of Genova (4/16), Polytechnic of Madrid (6/14), Tsinghua University (Beijing) (6/13), University of Palermo (5/13), National Taiwan University (3/06), University of Genova (6/07-7/07), University of Minnesota (3/06, 2/95-5/95), University of Pisa (7/95, 7/05-8/05), Politecnico di Torino (5/90-7/90)

Selected Honors and Awards:

Inaugural Fellow, ASCE Engineering Mechanics Institute, 2013
President, ASCE Engineering Mechanics Institute, 1/13-10/1
ASCE Fellow, 11/07
John S. Diekhoff Award for Distinguished Graduate Teaching, CWRU, 2000

Editorial Activities

Editor-in-Chief, ASCE Journal of Engineering Mechanics (7/12-present)
Associate Editor, *Meccanica* (7-6-present)
Editorial Board, Journal of the Mechanical Behavior of Materials (5/13-present)
Editorial Board, Lecture Notes in Mechanics, ASCE Engineering Mechanics Institute (9/10-present)
Associate Editor, Journal of the American Ceramic Society ('05-present)
Associate Editor, Journal of Nano Research ('07-present)

Research:

My research focuses on the development and application of theoretical, computational and experimental techniques to characterize the response of materials and structures to mechanical, thermal, and environmental loads. I am particularly interested in characterizing the mechanics of fatigue and fracture. My multidisciplinary research, which has been funded by the *National Science Foundation*, *DARPA*, the *National Institutes of Health*, the *Office of Naval Research*, the *United States Air Force*, *NASA* and the *Ohio and Minnesota Departments of Transportation* has been applied to problems arising in civil engineering, mechanical and aerospace engineering, materials science, electromechanical systems, biological tissues and prosthetic design. I have published more than one hundred papers in the top refereed journals, including *Science* and *Nature*, and several of my research projects have been featured in the popular press, including the *New York Times Science Times*, *American Scientist*, *Science News*, *Business Week*, *Financial Times*, *Geo*, *Pour La Science* and *Industry Week*.

My current research involves bioinspired design of damage tolerant composites, reliability of microelectromechanical systems (MEMS) devices, structural testing of nanoscale biological and synthetic materials such as collagen fibrils, carbon nanotubes and MEMS materials, computational materials science, multiscale modeling of heterogeneous materials, time-dependent progressive collapse of concrete structures, the design and testing of a new earthquake energy dissipation system for steel structures, size effects in quasibrittle materials, statistical strength distributions in glass and other types of ceramics, theoretical modeling of fiber reinforced plastics for repair of cracked structures, fracture mechanics-based design of pavements.

Publications:

Selected Journal Publications (complete citation in complete list of publications):

“Structural Basis for the Fracture Toughness of the Shell of the Conch Strombus Gigas,” *Nature*, Vol. 405, June 29, pp. 1036-1040, 2000.

“Fatigue Failure in Polysilicon Not Due to Simple Stress Corrosion,” *Science*, Vol. 298, pp. 1215-1219, Nov. 8, 2002.

“Electrostatically Actuated Failure of Microfabricated Polysilicon Fracture Mechanics Specimens,” *Proceedings of the Royal Society of London*, A455, pp. 3807-3823, 1999.

“A Newtonian Interpretation of Configurational Forces on Dislocations and Cracks,” *Journal of the Mechanics and Physics of Solids*, Vol. 95, pp. 602-620, October 2016.

“Stress-strain Experiments on Individual Collagen Fibrils,” *Biophysical Journal*, Vol. 95, 2008, 3956-3963.

“Coupled Quantum Mechanical/Molecular Mechanical Modeling of the Fracture of Defective Carbon Nanotubes and Graphene Sheets,” *Physical Review B* 75, 1 2007.

"Failure Characteristics of Short Anchor Bolts Embedded in a Brittle Material," *Proceedings of the Royal Society of London*, A404, pp. 35-54, 1986.

Articles in Magazines and Popular Books

6. R. Ballarini and M. Liao, “The Infamous Gusset Plates,” in *The City, The River, the Bridge*, edited by Patrick Nunnally, University of Minnesota Press, 2011.

5. R. Ballarini and A.H. Heuer, “Des Secrets dans la Coquille,” *Pour La Science* (French edition of *Scientific American*), No. 372, Octobre 2008, 86-92.

4. R. Ballarini and A.H. Heuer, “Secrets in the Shell,” *American Scientist*, September-October 2007, 422-429.

3. R. Ballarini, “Da Vinci-Euler-Bernoulli Beam Theory?,” *ASME Mechanical Engineering Magazine Online*, 4/18/03.

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Reviews and Book Chapters

7. R. Ballarini and M. Liao, "The Infamous Gusset Plates," *The City, The River, the Bridge*, edited by Patrick Nunnally, University of Minnesota Press, 2010.
6. R. Ballarini, H. Kahn, A.H. Heuer, M.P. de Boer and M.T. Dugger, "MEMS Structures for on-Chip Testing of Mechanical and Surface Properties of Thin Films," in Comprehensive Structural Integrity: Fracture of Materials from Nano to Macro, Volume 8: Interfacial and Nanoscale Failure, Edited by W. Gerberich and W. Yang, Chapter 8.09, pp. 325-356, Elsevier Science, 2003.
5. A.H. Heuer, X. Su, S. Kamat and R. Ballarini, "Mollusk Shells: Structure/Property Relationships," in Encyclopedia of Materials: Science and Technology, Edited by K.H.J. Buschow, R.W. Cahn, M.C. Flemings, B. Ilshner, E.J. Kramer and S. Mahajan, Elsevier Science, 2001.
4. R. Ballarini, "The Role of Mechanics in Microelectromechanical Systems Technology," AFRL-ML-WP-TR-1998-4209, 146 pages, October 1998.
3. R. Ballarini and S.P. Shah, "Fracture Mechanics Based Analyses of Pull-Out Tests and Anchor Bolts," in Analysis of Concrete Structures by Fracture Mechanics, Chapman and Hall, 1991, pp. 245-280.
2. R. Ballarini, S. Ahmed and R.L. Mullen, "Finite Element Modeling of Frictionally Restrained Composite Interfaces," in Interfaces in Metal-Ceramic Composites, edited by R.Y. Lin, R.J. Arsenault, G.P. Martins and S. Fishman, The Minerals, Metals and Materials Society, Warrendale, PA, 1989, pp. 349-388.
1. R. Ballarini, S.P. Shah and L.M. Keer, "Nonlinear Analysis for Mixed-Mode Fracture," in Application of Fracture Mechanics to Cementitious Composites, Martinus Nijhoff, 1985, pp. 51-83.

Invited Talks

Since 2007 I have given numerous invited talks (too many to list here) related to the Nation's infrastructure to professional and policy making organizations

116. "Fracture Mechanics-Based Design of Anchor Bolts," presented at the Symposium to Honor Zdenek Bazant for his 80th Birthday, ASCE EMI Conference, June 5, 2017.

115. "Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force," presented the Wenyan Seminar at the Department of Structural Engineering, Tongji University, April 2, 2017.

114. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” presented to the Solid and Structural Mechanics Group at University of Trento, July 20, 2016.
113. “Atomistic Modeling of Fracture in Silicon and Silicon-Silicon Interfaces,” presented to the Department of Industrial Engineering, University of Parma, July 7, 2016.
112. “The Collapse of the I-35W Bridge in Minneapolis,” presented to the Dipartimento di Ingegneria delle Costruzioni, dell’Ambiente e del Territorio, University of Genova, May 11, 2016.
111. “Reverse Engineering of the Shells of Mollusks: An Example of Bioinspired Design in an Inspired Research Environment,” presented to Technical University of Vienna as part of their Vision 2025 initiative, May 2, 2016.
110. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” keynote lecture at International Conference on Plasticity, Kona, Hawaii, January 6, 2016.
109. “Reverse Engineering of Biological Structures,” presented to Department of Mechanical Engineering, M.I.T., 12/1/15.
108. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” Department of Civil and Environmental Engineering, Rice University, December 4, 2015.
107. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” Department of Aerospace Engineering and Mechanics, University of Texas at Austin, October 8, 2015.
106. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign, September 21, 2015.
105. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” Keynote Lecture at ASME 2015 4th Global Conference on Nanoengineering for Medicine and Biology, Minneapolis, April 19-22, 2015.
104. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” Houston Methodist Research Institute, January 14, 2015.
103. “Reverse Engineering of Biological Structures,” Hong Kong Polytechnic University, January 6, 2015.
102. “Structural Testing at the Micro and Nano Scales,” Public Lecture organized by Hong Kong Polytechnic University, January 5, 2015.
101. “Testing Collagen Fibrils Using MEMS Platforms,” 7th World Congress of Biomechanics,” Boston, MA, July 9, 2014.
100. “Reverse Engineering of Biological Structures,” Department of Materials Science, Universidad Politécnica de Madrid, June 18, 2014.
99. “Structural Testing at the Micro and Nano Scales,” Department of Materials Science, Universidad Politécnica de Madrid, June 17, 2014.
98. “Structural Testing at the Micro and Nano Scales,” Department of Civil and Environmental Engineering, Georgia Institute of Technology,, June 19, 2014.
97. “Structural Testing at the Micro and Nano Scales,” Department of Civil and Environmental Engineering, University of Houston, March 17, 2014
96. “Breaking Invisible Specimens with Zero Force,” Department of Engineering Mechanics, Tsinghua University, Beijing, China, June 14, 2013.
95. “Effects of Stress Singularities on Scaling of Quasibrittle Fracture,” the 13th International Conference on Fracture, June 16-21, 2013, Beijing.

94. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” the 13th International Conference on Fracture, June 16-21, 2013, Beijing.
93. “Distributed Damage Creates Flaw Tolerance,” the 13th International Conference on Fracture, June 16-21, 2013, Beijing.
92. “Structural Testing at the Micro and Nano Scales,” Advances in Computational Mechanics, a Conference Celebrating the 70th Birthday of Thomas J.R. Hughes, February 27, 2013.
91. “Breaking Invisible Specimens with Zero Force,” presented to the Department of Mechanical Engineering, Boston University, February 1, 2013.
90. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” presented to the Department of Civil and Environmental Engineering, Northwestern University, November 20, 2012.
89. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” presented to the Department of Mechanical and Aerospace Engineering, Illinois Institute of Technology, November 19, 2013.
88. “Structural Testing at the Micro and Nano Scales: Breaking Invisible Specimens with Zero Force,” presented to the Department of Civil and Environmental Engineering, University of Massachusetts at Amherst, October 19, 2012.
87. “Distributed Damage Creates Flaw Tolerance,” invited talk at the Symposium Honoring the 75th Birthday of Zdenek Bazant, 49th Annual Meeting of the Society of Engineering Science, Atlanta, Georgia, October 10, 2012.
86. “An Academic Investigation of the I-35W Bridge Collapse,” Luminary Session Invited Talk, Prognostic Health Management Society Conference 2012, Minneapolis, Minnesota, September 26, 2012.
85. “The Importance of Infrastructure to National Security and Culture,” Keynote Lecture, 11th Annual Conference of the Chinese Overseas Transportation Association, Beijing, China, August 4, 2012.
84. “Structural Testing at the Micro and Nano Scales,” Department of Mechanical Engineering, Tufts University, April 19, 2012.
83. “Structural Testing at the Micro and Nano Scales,” Biointerest Group, University of Illinois at Urbana-Champaign, October 20, 2011.
82. “Mechanical Testing and Computational Modeling of Individual Collagen Fibrils,” Society of Engineering Science 2011 Technical Meeting, Northwestern University, October 12, 2011.
81. “Structural Testing at the Micro and Nano Scales,” presented at “Innovations in Mechanical Testing: From Molecules to Large Engineering Structures,” a workshop sponsored by ASM-International, Oak Ridge National Laboratory, April 19, 2011.
80. “Cracking the Conch Conundrum: Tough Ceramics at the Seashore,” presented to the Department of Civil Engineering at University of South Carolina, February 11, 2011.
79. “Collagen Fibrils: Experiments and Computational Modeling,” Special Structures Seminar, Department of Civil Engineering, Northwestern University,” July 8, 2010.
78. “Reverse Engineering of Biological Structures,” Keynote Lecture, 2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials, Virginia Tech, June 26, 2009.
77. “Cracking the Conch Conundrum: Tough Ceramics at the Seashore,” presented to the Department of Civil Engineering at Columbia University, March 24, 2009.
76. “Structural Testing at the Micro and Nano Scales,” presented to the Department of Civil Engineering at City College of New York, March 19, 2009.

75. "Investing in Infrastructure: The Effects of our Decaying Infrastructure on our National Security and Culture," Institute of Technology Public Lecture Series, University of Minnesota, November 19, 2008.
74. "Breaking Invisible Specimens with Zero Force," Sandia National Laboratories, Albuquerque, New Mexico, 3/31/08.
73. "Breaking Invisible Specimens with Zero Force," workshop on Strength and Fracture Standards at the Micro and Nano Scales, American Ceramic Society Meeting, Daytona Beach, 1/27/08.
72. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Café Scientifique, 12/11/07.
71. "Structural Fatigue in our Nation's Transportation Infrastructure," Oberstar Forum on Infrastructure, 10/8/07.
70. "Biological Structures Mitigate Catastrophic Fracture through Various Strategies," Department of Aerospace and Mechanics, University of Texas at Austin, 9/28/07.
69. Cyclic Load Induced Weakening and Strengthening of MEMS Silicon, Symposium on Fundamental and Characterization (Fundamentals of Brittle Fracture session), Materials, Structures and Technology Conference (MS&T'07), Detroit, 9/19/07.
68. "Tensile Testing of Collagen Fibril Using a MEMS Platform," 9th U.S. National Congress on Computational Mechanics, San Francisco, 7/25/07.
67. "Tensile Testing of Collagen Fibril Using a MEMS Platform," International Workshop on The Interplay Between Mechanics and Biology on Multiple Length Scales, Castro Urdiales, Spain, 7/1/07-7/4/07.
66. "Biological Structures Mitigate Catastrophic Fracture through Various Strategies," Department of Civil Engineering, M.I.T., 4/3/07.
65. "Bioinspired Design of Composite Materials," Department of Civil Engineering, Tufts University, 4/2/07.
64. "Structural Testing at the Micro and Nano Scales," Department of Aerospace Engineering and Mechanics, University of Minnesota, Dec. 1, 2006.
63. "Structural Testing at the Micro and Nano Scales," Department of Civil Engineering, University of Thessaly, Greece, July 20, 2006.
62. "Fracture Mechanics of Mollusks Shells," Department of Civil Engineering, University of Thessaly, Greece, July 20, 2006.
61. "Biological Structures Mitigate Catastrophic Fracture Through Various Strategies," 19th Panhellenic Conference/Summer School, Nonlinear Science and Complexity, Thessaloniki, Greece, July 12, 2006.
60. "Structural Testing at the Micro and Nano Scales," 3rd Workshop on Nanosciences and Nanotechnologies, Thessaloniki, Greece, July 10, 2006.
59. "Structural Testing at the Micro and Nano Scales," Department of Civil Engineering, University of Southern California, May 19, 2006.
58. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Department of Construction Engineering, National Taiwan University of Science and Technology, April 27, 2006.
57. "Structural Testing at the Micro and Nano Scales," Institute of Applied Mechanics, National Taiwan University, April 26, 2006.
56. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Institute of Applied Mechanics, National Taiwan University, April 25, 2006.
55. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Department of Civil Engineering, University of Minnesota, March 12, 2006.

54. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Department of Mechanical Engineering and Materials Science, Rice University, December 12, 2005.
53. "Fracture and Fatigue of Silicon MEMS Structures," Gordon Conference Solid State Studies in Ceramics, July 18, 2005, Tilton School, New Hampshire.
52. "Breaking Invisible Specimens with Zero Force," Department of Structural and Geotechnical Engineering, Universita di Genova, July 14, 2005.
51. "Toughening Mechanisms in Mollusk Shells," Laboratory of Mechanics, Ecole Polytechnique Federale de Lausanne, June 22, 2005.
50. "Composite Materials: Lessons from Nature," Department of Bioengineering, University of Toledo, Dec. 3, 2004.
49. "Breaking Invisible Specimens with Zero Force," Department of Structural Engineering, Politecnico di Milano, June 28, 2004.
48. "Breaking Invisible Specimens with Zero Force," Department of Structural Mechanics, Universita di Pisa, June 22, 2004.
47. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Department of Structural Mechanics, Universita di Pisa, June 23, 2004.
46. "Breaking Invisible Specimens with Zero Force," Department of Mechanical Engineering, Northeastern University, January 23, 2003.
45. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Division of Engineering and Applied Science, Harvard University, December 3, 2003.
44. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Division of Engineering, Brown University, November 5, 2003.
43. "Breaking Invisible Specimens with Zero Force," Department of Mechanical and Environmental Engineering, U.C. Santa Barbara, January 13, 2003.
42. "Breaking Invisible Specimens with Zero Force," Department of Civil and Environmental Engineering, M.I.T., December 3, 2002.
41. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Department of Aeronautics and Astronautics, M.I.T., April 3, 2002.
40. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Mechanical Engineering Department, Northwestern University, March 22, 2002.
39. "Crack Growth in Polysilicon MEMS Structures," Symposium on the Mechanical Properties of MEMS Structures, ASME Winter Annual Meeting, New York, November 11-16, 2001.
38. "Design of Multilayered Polysilicon fo MOEMS Applications," Symposium on the Mechanical Properties of MEMS Structures, ASME Winter Annual Meeting, New York, November 11-16, 2001.
37. "Fracture, Fatigue and Strength of MEMS Polysilicon and Silicon Carbide MEMS," Department of Mechanical and Aerospace Engineering, Ohio State University, October 12, 2001.
36. "The Effects of Grain Boundary Stiffness on the Size Effect in Cracked Polycrystalline Films," Symposium on Modeling and Simulation of Micro and Nano Systems, 6th U.S. National Congress on Computational Mechanics, Dearborn, Michigan, August 2, 2001.
35. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Civil Engineering Department, City College of New York, April 23, 2001.
34. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Olin College of Engineering, April 18, 2001
33. "Cracking the Conch Conundrum; Tough Ceramics at the Seashore," Mechanical Engineering and Materials Science Department, Princeton University, October 27, 2000.
32. "Breaking Invisible Specimens with Zero Force" Mechanical Engineering and Materials Science Department, Rice University, February 28, 2000.

31. "Breaking Invisible Specimens with Zero Force" Civil and Environmental Engineering Department, Cornell University, November 7, 1999.
30. "Mechanics of MEMS," presented at the NSF Workshop on Nano and Micro-Mechanics of Solids for Emerging Science and Technology, Palo Alto, California, October 7-8, 1999.
29. "Electrostatically Actuated Failure of Microfabricated Polysilicon Fracture Mechanics Specimens," Texas Instruments Digital Imaging Group, Dallas, Texas, March 2, 1999.
28. "Recent Advances in Experimental and Theoretical Studies of the Mechanical Behavior of Polycrystalline Silicon for Microelectromechanical Systems," MRS 1998 Fall Meeting, Boston, Nov. 30-Dec.4, 1998.
27. "Theoretical and Experimental Studies on the Fracture Mechanics of Microelectromechanical Systems," Department of Engineering Mechanics, Ohio State University, October 6, 1998.
26. "Monte Carlo Study of the Role of Grain Structure on Crack-Tip Energy Release Rates in Polycrystalline Thin Films," Thirteenth U.S. National Congress of Applied Mechanics, University of Florida, June 21-26, 1998.
25. "On Fracture Toughness of Polycrystalline Silicon Microdevices," Department of Aerospace Engineering and Engineering Mechanics, University of Texas at Austin, March 27, 1997.
24. "Failure Mechanisms of the *Strombus Gigas* Conch Shell," Istituto di Scienze delle Costruzioni, Universita di Pisa, Pisa, Italy, July 12, 1995.
23. "A Cohesive Zone Model for Cracks Terminating at a Bimaterial Interface," Division of Engineering and Applied Sciences, Harvard University, May 31, 1995.
22. "Back of the Envelope Fracture Mechanics," Department of Civil Engineering, University of Minnesota, April 29, 1995.
21. "Numerical and Analytical Modeling of Delamination Cracking in Brittle Matrix Composite Laminates," Istituto di Scienze delle Costruzioni, Universita di Pisa, Pisa, Italy, October 13, 1994.
20. "Near Tip Dual-Length Scale Mechanics of Mode-I Cracking in Laminate Brittle Matrix Composites," I.U.T.A.M. Symposium on Size Effects in the Failure Mechanisms of Materials and Structures, Politecnico di Torino, Italy, October 3-7, 1994.
19. "Fracture Mechanics Analyses of Anchor Bolts Embedded in Brittle Materials," Department of Civil Engineering, University of Minnesota, October 15, 1993.
18. "A Certain Mixed Boundary Value Problem for a Bimaterial Interface," Symposium in honor of Professor John Dundurs, U.S. National Congress of Theoretical and Applied Mechanics, Seattle, Washington, June 26-July 1, 1994.
17. "Numerical and Analytical Modeling of Delamination Cracking in Brittle Matrix Composite Laminates," School of Aeronautics and Astronautics, Purdue University, Nov. 19, 1992.
16. "Near-Tip Dual-Length Scale Mechanics of Mode-I Cracking in Laminate Brittle Matrix Composites," session entitled Ceramic Matrix Composites, Structural Dynamics and Materials Conference, Dallas, Texas, April 13-15, 1992.
15. "Fracture Mechanics Analyses of Anchor Bolts Embedded in Brittle Materials," Department of Engineering Mechanics, University of Kentucky (Lexington), June 20, 1991.
14. "Effects of Superposed Hydrostatic Stress on the Elastoplastic Behavior of Two-Phase Composites," session entitled Creep/Inelastic Behavior, ASME-AMD Symposium on the Mechanics of Composites at Elevated and Cryogenic Temperatures, Columbus, Ohio, June 11-19, 1991.

13. "Analysis of a CMC Compact Tension Specimen," session entitled Experimental and Computational Modelling of Composite Materials, ASCE Engineering Mechanics Specialty Conference, Columbus, Ohio, May 19-22, 1991.
12. "Stability Analysis of Bridged Cracks in Brittle Matrix Composites," session entitled Mechanics of Ceramic Matrix Composites, ASME International Gas Turbine and Aeroengine Congress and Exposition, Orlando, Florida, June 3-6, 1991.
11. "Dislocation Modeling of Cracks," Dipartimento di Costruzioni Meccaniche e Nucleari (Department of Mechanical and Nuclear Constructions), Universita di Pisa, Pisa, Italy, July 3, 1990.
10. "Fracture Mechanics Modeling of Short Anchor Bolts," Istituto di Scienze delle Costruzioni, Universita di Pisa, Pisa, Italy, June 12, 1990.
9. "Analytical Techniques for Elastostatics Problems Involving Bimaterial Interfaces," Department of Mechanical Engineering and Engineering Mechanics, Michigan Technological University, April 17, 1990.
8. "Finite Element Modeling of Frictionally Restrained Composite Interfaces," session entitled Interfaces in Metal-Ceramic Composites II: Modeling of Interfaces Properties, TMS Annual Meeting, Anaheim, California, February 18-22, 1990.
7. "Local-Global Analysis of Crack Growth in Continuously Reinforced Ceramic Matrix Composites," session entitled Computational Methods for Composites I: Micromechanics, 3rd Joint ASCE-ASME Mechanics Conference, University of California, San Diego, July 9-12, 1989.
6. "Local-Global Analysis of Crack Growth in Continuously Reinforced Ceramic Matrix Composites," session entitled Mechanics of Ceramic Matrix Composites, 34th ASME International Gas Turbine and Aeroengine Congress and Exposition, Toronto, Canada, June 5, 1989.
5. "Elastostatics Problems for a Bimaterial Interface," ICOMP Workshop on Dealing with Large Gradients in Computational Fluid and Structural Mechanics, NASA-Lewis Research Center, August 16, 1988.
4. "The Interaction Between a Crack and a Dislocation Dipole," Department of Metallurgy and Materials Science, Case Western Reserve University, March 25, 1988.
3. "The Pull-Out of Rigid Anchors - Theory and Experiment," Department of Mechanics and Materials Science, Rutgers University as part of their Fall 1987 seminar series, October 1, 1987.
2. "The Effects of Crack Surface Friction and Roughness on Crack Tip Stress Fields," session entitled Computational Approaches to Interface Behavior I, American Society of Civil Engineers Engineering Mechanics Division Specialty Conference in Buffalo, New York, May 20-22, 1987.
1. "Interesting Crack Problems," Fracture and Fatigue section of NASA-Lewis Research Center, July 15, 1986.

Selected Grants During Past Decade

DOE "Multiple Degradation Mechanisms in Reinforced Concrete Structures; Modeling and Risk Analysis" (I am currently P.I. but B. Gencturk of University of Southern California who was Assistant Professor at UH is leading the effort).

DOE "Cask Mis-Loads Evaluation Techniques," (I am currently P.I. but B. Gencturk of University of Southern California who was Assistant Professor at UH is leading the effort).

NSF “A Multiscale Reliability Model for Brittle MEMS Materials and Structures” (with J. Le and E. Tadmor, University of Minnesota).

NSF “Nanomechanical Characterizations of Interfaces in Carbon Nanotube Reinforced Nanocomposites” (with J. Lou and B. Yakobson, Rice University).

NIH “Single Fibril Mechanics” (with S. Eppell, CWRU).

NSF “SGER: Damage Investigation and Data Collection for Collapsed I-35W Bridge .”

NSF “NIRT-Novel Experiments and Models for the Nanomechanics of Polymeric and Collagenic Nanofibers” (with University of Illinois and University of Virginia).

NSF “Bioinspired MEMS Composites.”

DARPA “Reliability of MEMS Materials” (with A. Heuer, CWRU)

Student Supervision:

Current Graduate Students

Seyedeh Hanie Seyed Joodat, Department of Civil and Environmental Engineering
Thesis: Theoretical and Computational Modeling of the Effects of Dual-Scale Porosity in Hydraulic Fracture (started 9/15)

Livia Costa-Mello, Department of Civil and Environmental Engineering
Thesis: Time-Dependent Progressive Collapse of Concrete Structures.

Graduated Students

Davide Giannuzzi, Ph.D. 2016, Department of Civil, Environmental and Geo Engineering, University of Minnesota
Thesis: Braced Ductile Shear Panel: a New Seismic Resistant Framing System

Igor Ostanin, Ph.D 2014, Department of Civil Engineering, University of Minnesota
Thesis: Multiscale modeling of carbon nanotube materials with distinct element method

Minmao Liao, Ph.D. 2011, Department of Civil Engineering, University of Minnesota
Thesis: Towards Fracture Mechanics-Based Design Approach for Unbonded Concrete Overlay Pavements

Lucas Hale, Ph.D. 2011, Department of Chemical Engineering and Materials Science, University of Minnesota
Thesis: Hardening Mechanisms of Silicon Nanospheres: A Molecular Dynamics Study

Roberto Piccinin, Ph.D 2010, Department of Civil Engineering, University of Minnesota

- Thesis: Effects of Compressive and Tensile Fields on the Load Carrying Capacity of Headed Anchors
- Zhilei (Julie) Shen , Ph.D. 2010, Department of Biomedical Engineering, CWRU
Thesis: Tensile Mechanical Properties of Isolated Collagen Fibrils Obtained by Micro-Electromechanical Systems Technology
- Li Chen, Ph.D. 2005, Department of Civil Engineering, CWRU
Thesis: A Bioinspired Micro-Composite
- Yuping Wang, Ph.D. 2003, Department of Civil Engineering, CWRU
Thesis: Crack-Tip Parameters in Polycrystalline Plates with Compliant Grain Boundaries
- Shekhar Kamat, Ph.D. 2000, Department of Materials Science and Engineering, CWRU
Thesis: Toughening Mechanisms in Laminated Composites: A Biomimetic Study in Mollusk Shells
- Ramazan Kayacan, Ph.D. 1997, Department of Mechanical Engineering, CWRU
Thesis: Structural Mechanics of Implant Supported Partial Dental Prostheses
- Alberto Romeo, Ph.D. 1995, Department of Civil Engineering, CWRU
Thesis: On a Crack Tip Interacting with a Bimaterial Interface
- David Lewicki, Ph.D. 1995, Department of Mechanical Engineering, CWRU
Thesis: Analytical and Experimental Analysis of Fatigue Crack Propagation in Helicopter Gears
- Zhiren Zhu, M.S. 2015
A Probabilistic Model for Failure of Polycrystalline Silicon MEMS Structures
- M. Liao, M.S. 2009
Thesis: A Computational Study of the I-35W Bridge Failure
- Aiqing Ni, M.S. 2002
Thesis: Optimum Design of Multi-Polysilicon Films for Prescribed Curvature
- Maissarath Nassirou, M.S. 2001
Thesis: Characterization of the Damage Mechanisms and Environmental Effects on the Mechanical Properties of the Shell of Strombus Gigas
- Nouredding Tayebi, M.S. 2000
Thesis: Fracture Toughness of Polysilicon MEMS Devices
- Li Chen, M.S. 2000
Thesis: Crack Propagation in a Material with Random Toughness
- Zhao Yang Chu, M.S. 2000
Thesis: Monte Carlo Simulation of Elastic Properties of Polycrystalline Materials Using the Johnson-Mehl Model
- Todd Cooper, M.S. 1999
Thesis: Size Effects (Macro- and Micro-Scale) on the Fracture Toughness Behavior of High Strength Concrete
- Brian Thornton, M.S. 1999
Thesis: Mechanochromic Behavior of Diacetylene Polymers

- Brandinelli, Luigi, M.S. 1997 (Fulbright Fellow)
Thesis: Fracture Mechanics of Polycrystalline Silicon Microdevices
- Anadutula, Rao, M.S. 1997
Thesis: Retrofitting Cracked Steel Bridges with Adhesively Bonded Plates
- Yin, Yumin, M.S. 1997
Thesis: Mechanical Properties of Polysilicon for Microelectromechanical Systems
- Marty Bixler, M.S. 1996
Project: Retrofitting Fatigue-Distressed Steel Bridges with Adhesively Bonded Plates
- Bartlett, Eric, M.S. 1994
Project: Fatigue Analysis of an Integral Sheet Metal Attachment to a Forged Fluid Tube Housing
- Ferrante, Gary, M.S. 1993
Thesis: An Analysis of Reflection Cracking Through Fracture Mechanics
- Bar-Lev, Noam, M.S. 1993
Thesis: Application of Fracture Mechanics to Damage Tolerance Analysis and Design of Aircraft Engine Mounts
- Gultop, Sukru, M.S. 1993
Thesis: The Effects of Superimposed Hydrostatic Pressure on the Mechanical Response of an Idealized Metal Matrix Composite
- Petersson, Joakim, M.S. 1992
Thesis: An Analysis of a Viscoelastic Road subjected to Tension and Heating
- Islam, Sanjib, M.S. 1992
Thesis: Near-Tip Dual-Length Scale Mechanics of Mode-I Cracking in Laminate Brittle Matrix Composites
- Genin, Guy, M.S. 1991
Thesis: The Effects of Superimposed Hydrostatic Pressure on Deformation in an Idealized Metal Matrix Composite
- Ozgur, Mehmet, M.S. 1991
Thesis: Boundary Element Modeling of Frictional Interfaces
- Sandeep Muju, M.S. 1991
Thesis: Stability Analysis of Bridged Cracks in Brittle Matrix Composites
- Yingchun Hsu, M.S. 1989
Thesis: Three-Dimensional Analysis of Surface Crack - Hertzian Stress Field Interaction
- Sk. Shamim Ahmed, M.S. 1989
Thesis: Local-Global Analysis of Crack Growth in Continuously Reinforced Ceramic Matrix Composites
- Post-Docs/Visiting Professors, Scholars and Students
- Evgeniya Dontsova, 9/15-present
- Dr. Gianni Royer-Carfagni, Universita di Parma, 10/15-5/16
- Sara Adibi, 4/15-5/16
- Alessia Monaco, Universita di Palermo, 8/13-12/13
- Francesco Conigliaro, Universita di Palermo, 9/13-11/13
- Martina Greco, Universita di Palermo, 9/13-11/13
- Giovanni Schicchi, Universita di Palermo, 9/13-11/13
- Annalisa Franco, University of Pisa, 3/13-8/13
- Mathieu Pieuchot, Ecole Polytechnique, 3/12-5/12

Dr. Yuye Tang (2008-2010)
Dr. M. Bialas, Institute of Fundamental Technological Research, Poland (2009-2010)
Prof. Ramazan Kayacan, Suleyman Demirel University, Turkey (2001-2002)
Prof. Dov Sherman, Technion, Israel (2000-2001)
Hal Kahn (1995-2002)
Hannes Kessler, University of Dresden (1994-1995)
Haian Luo (1989-1991)
Qingyuan Meng (1992-1993)
Tian, T.Z. (1993-1994)

Consulting

Nestle Research and Development; City of Cleveland; Wright Patterson Air Force Base; Garson and Associates; Spangenberg, Shibley and Liber; Alcatel; General Electric Company; Alcoa; Fiber Materials, Inc.; Teltech; Fracture Analysis Consultants; Nurenberg, Plevin, Heller and McCarthy.

DETAILED BIOGRAPHICAL RESUME OF ZDENĚK P. BAŽANT

June 2, 2018

PERSONAL: Born Dec. 10, 1937, Prague; U.S. citizen, naturalized 1976; married 1967; two children. Office tel.: (847)491-4025 (secretary 491-3351, dept. 491-3257, 491-3258). Fax: 491-4011.
E-mail: [REDACTED]
www.civil.northwestern.edu/people/bazant.html

EDUCATION

C.E. (Civil Engineer), Czech Technical University in Prague (ČVUT) (with the highest distinction, straight A's all 5½ years, first in class), 1960.

Ph.D. in Engineering Mechanics, Czechoslovak Academy of Sciences (ČSAV), Prague, 1963.

Postgraduate Diploma in Theoretical Physics, Charles University, Prague, 1966.

Docent (habilitatis) in Concrete Structures, Czech Technical University in Prague (ČVUT), 1967.

REGISTRATION

Registered Structural Engineer, Illinois, 1971–.

PROFESSIONAL POSITIONS

Bridge Engineer, Dopravoprojekt (State Consulting Firm), Prague, Jan. 1961–Dec. 1963.

Scientific Worker and Adjunct Assistant Professor, Czech Technical University (ČVUT), Building Research Institute (now Klokner Institute), Prague, 1964–67.

Post-Doctoral Visiting Researcher, CEBTP Paris, 1966–67.
Research Fellow, University of Toronto, 1967–68.

Associate Research Engineer, University of California, Berkeley, 1968–69.

Associate Professor of Civil Engineering, Northwestern University, 1969–1973.

Professor of Civil Engineering, Northw. Univ., 1973–.

Staff Consultant (part-time), Argonne National Laboratory, 1974–94.

Walter P. Murphy Professor of Civil and Mechanical Engineering and Materials Science (a distinguished chair endowed in 1942 by W.P. Murphy), Northw. University, 1990–.

McCormick Institute Professor, Northwestern University, 2002– (held simultaneously with Murphy Chair).

MAIN ADMINISTRATIVE POSITIONS

Director, Center for Concrete and Geomaterials, Northwestern University, 1981–1987.

Program Coordinator, Structural Engrg. and Materials, Northwestern University, 1974–1978, 1992–96.

Secretary (elected), Class III of National Academy of Sciences (comprising sections Engrg. Science, Appl. Math., Appl. Phys. & Computer Sci.), 2009–2012.

HONORS

2002 elected **Member, National Academy of Sciences, Washington, D.C.**¹

1996 elected **Member, National Academy of Engineering, Washington, D.C.**²

2008 elected **Fellow, American Academy of Sciences and Arts (AAAS)**, Boston.

2015 elected *Foreign Member of Royal Society of London (ForMemRS)*.³

1998 elected *Foreign Member, Academy of Engineering of Czech Republic*, Prague.

2000 elected *Corresponding Foreign Member, Austrian Academy of Sciences*, Vienna.

2006 elected *Foreign Member, Italian National Academy (Accademia Nazionale dei Lincei)*, Rome.

2008 elected foreign *Corresponding Member, Spanish Royal Academy of Engineering (Real Academia de Ingenieria)*.

2017 elected *Foreign Member, Academy of Athens* (national academy of Greece).

2017 elected *Foreign Member, National Academy of Engineering of India*.

2002 elected *Foreign Member, Lombard Academy (Istituto Lombardo—Accademia di Scienze e Lettere, Milan, Italy)*.

2014 elected *Foreign Member, Academia Europaea*, London.

2008 elected *Member European Academy of Sciences and Arts, Salzburg*.

Honorary Doctorates

1991 **Honorary Doctorate (Dr. h.c.)**, Czech Technical University in Prague (ČVUT), Nov. 14⁴.

1997 **Honorary Doctorate (Dr.-Ing.E.h., Doktor-Ingenieurs Ehrenhalber)**, Universität Fridericiana (Technische Hochschule) Karlsruhe, Germany (conferred May 28, 1997, ceremony March 23, 1998)⁵.

2000 **Honorary Doctorate** (Doctor of Science h.c.), University of Colorado, Boulder.

¹Citation: “Bazant discovered the scaling law for the energetic size effect in quasibrittle structural failure bridging ductile and brittle behaviors, verified it experimentally for many important materials, showed its use for measuring fracture characteristics, and conceived nonlocal and crack-band models now widely used in numerical simulations of quasibrittle failure of structures.”

²For “contributions to solid mechanics, particularly structural stability and size effects in fracture.”

³citation Apr. 30: “Zdeněk Bažant discovered the scaling law for the energetic size effect in quasi-brittle structural failure, bridging ductility and brittleness. He verified the law experimentally for many important materials, showed its use for measuring fracture characteristics, and conceived the crack-band and non-local models now widely used in industry and commercial programmes to analyse quasi-brittle structural failure.”

⁴cited for “important scientific contributions to mechanics”

⁵“In recognition of outstanding accomplishments in the field of building materials and structural engineering”

- 2001 **Honorary Doctorate** ('Laurea'), Politecnico di Milano, Italy (conferred Oct. 25, 2001)⁶
- 2004 **Honorary Doctorate** (Docteur honoris causa), I.N.S.A. (Institut national des sciences appliquées de Lyon), Oct. 15, Villeurbanne, France.
- 2005 **Honorary Doctorate** (Dr.techn.h.c., Ehrendoktor der technischen Wissenschaften), Technical University Vienna (T.U. Wien), Oct. 28, Austria⁷.
- 2011 **Honorary Degree – Doctor of Engineering**, Ohio State University, Columbus (Dec. 11)⁸

Honorary Memberships:

- 2007 **Honorary Member, ASCE** (Am. Soc. of Civil Engrs.)
- 2012 **Honorary Member, ASME** (Am. Soc. of Mechanical Engrs.)
- 2011 **Honorary Member, ACI** (Am. Concrete Institute).
- 2015 **Honorary Member, RILEM** (Int. Union of Res. in Mat. & Str., Paris)
- 1991 **Honorary Member** Building Research Institute of Spain, Madrid.
- 2005 **Honorary Member, CCS** Czech Concrete Society, Prague (Česká betonářská společnost).
- 2009 **Honorary Member, CSM** Czech Society of Mechanics, Prague (Česká společnost pro mechaniku).
- 2016 **Honorary Member** Czech Association of Civil Engineers, Prague (Český svaz stavebních inženýru), Prague.

Elected Fellow:

American Academy of Mechanics (1978), Society of Engineering Science⁹ (1979), RILEM (Paris, 1977), ASME (1989), ASCE (1983), ACI (1979); U.S. Assoc. for Computational Mechanics (USACM, 2009), Czecho-Slovak Society of Arts and Sciences (Washington, D.C., 2003), Engineering Mechanics Institute of ASCE (2013).

Elected Member: Sigma Xi (Scientific Research Honor Society), 2017–.

Medal and Prize Named after Bažant:

1) **Zdeněk P. Bažant Medal for Damage Prevention**, established in 2015 by the Am. Soc. of Civil Engrs. as an overall society medal administered by ASCE Eng. Mech. Institute in consultation with USNC-TAM; <http://www.asce.org/templates/award-detail.aspx?id=11613>

2) **Z.P. Bažant's Prize in Engineering Mechanics**, given annually since 2012 by the Czech Society of Mechanics, Prague; selection comm. joint with Czech Techn. Univ. Prague and Czech Academy of Sciences (see <http://www.csm.cz/en/z-p-bazant-prize-for-engineering-mechanics/>)

Medals, Prizes & Awards Received:

2016 *Austrian Cross of Honor for Science and Art I. Class*, state honor conferred by President of Austria in Imperial Palace (Hofburg), Vienna.

- 2009 *Timoshenko Medal*, ASME (Am. Soc. of Mechanical Engrs.).¹⁰
- 2005 *Theodore von Karman Medal*, ASCE (Am. Soc. of Civil Engrs.).¹¹
- 1996 *W. Prager Medal*, Soc. of Engng. Science (SES).¹²
- 2018 Alfred M. Freudenthal Medal, ASCE.¹³
- 1996 *Newmark Medal*, ASCE.¹⁴
- 2015 *Raymond Mindlin Medal*, ASCE¹⁵
- 1997 *W.R. Warner Medal*, ASME (Am. Soc. of Mechanical Engrs.).¹⁶
- 2008 *Nadai Medal*, ASME (Am. Soc. of Mech. Eng.)¹⁷
- 2011 *Maurice Biot Medal*, ASCE.¹⁸
- 2008 *Wilhelm Exner Medal*, Austrian Trade Association (Gewerbeverein), Vienna.
- 1997 *J.J.R. Croes Medal*, ASCE.¹⁹
- 2003 *Lifetime Achievement Award*, from ASCE Illinois Structural Engineering Section.
- 1993 *Medal of Czech Society for Mechanics*²⁰ (čestná medaile České společnosti pro mechaniku), Prague.
- 1990 *Torroja Gold Medal* from Building Research Institute of Spain.²¹
- 1975 *L'Hermite Medal* from RILEM²² (in 1975 called RILEM Medal).
- 2007 *Zdeněk Bažant (Sr.) Medal* (1st recipient of), Czech Techn. University, Prague (ČVUT) (medal named

¹⁰“For fundamental contributions to scaling research in solid mechanics, particularly to the effect of the size of a structure on its strength and failure behavior; and for outstanding advances in structural stability, fracture mechanics, the micromechanics of damage, concrete creep and probabilistic mechanics”

¹¹The Medal is given “in recognition of distinguished achievement in engineering mechanics”; cited “for extensive and substantive contributions to the understanding and solution of multitude of problems in engineering mechanics involving structural stability, behavior of concrete, and uncertainty and scale effects in materials and structures”

¹²Given once every two years “for contributions to solid mechanics”.

¹³Given once every two years. Cited for “Developing a comprehensive theory of probabilistic mechanics of strength, lifetime, and size effect of quasi-brittle structures.”

¹⁴The Medal is given to “a member who, through contributions to structural mechanics, has helped substantially to strengthen the scientific base of structural engineering”; cited for “fundamental contributions to the understanding of constitutive behavior of structural materials, nonlinear fracture mechanics and stability of structures.”

¹⁵Cited for “outstanding contributions to mechanics and for important extensions of Mindlin’s results to nonlocal softening damage and size effect in quasibrittle materials”.

¹⁶The Medal “honors outstanding contributions to the permanent literature of engineering”; cited for “important contributions to solid mechanics, focusing on the size-effect law for failure of brittle structures, modeling of material damage from softening, local and nonlocal concepts, stability and propagation of fracture and damage in material and thermodynamic concepts associated with stability of non-elastic structures.”

¹⁷Cited “for demonstrating spurious localization instability in strain-softening models of quasibrittle materials, devising a remedy by crack-band and nonlocal damage formulations, discovering and experimentally validating the energetic size effect law for such materials, and showing applications to particulate and fiber composites.

¹⁸Cited “for groundbreaking contributions to the mechanics of concrete as a nano-porous material, particularly the creep and diffusion processes, thermodynamics of nano-pore water and high temperature effects, with numerical algorithms and consequences for structural design”.

¹⁹For paper “Is No-Tension Design of Concrete and Rock Structures Always Safe?—Fracture Analysis,” by Bažant, J. Struct. Eng. 122, Jan. 1996, 2–10.

²⁰“For advances in mechanics.”

²¹Cited for “outstanding achievements in the fields of structural engineering and mechanics of concrete”

²²Cited for “brilliant developments in mechanics of materials, thermodynamics of creep and stability theory, bridging experimental and theoretical research”.

⁶Cited for “...novel approaches to inelastic and time-dependent behavior of concrete, lasting contributions to quasibrittle fracture, ... innovative techniques for material instability. Bažant’s law for scale effects in fracture and microplane constitutive model represent fundamental contributions...”

⁷“For accomplishments in the field of stability of structures and size effects in fracture mechanics”

⁸Cited for “distinguished career as a foremost civil and mechanical engineer” and for “significant contributions to the advancement of engineering research and education”.

⁹cited for “many important and lasting contributions in the mechanics of solids and structures, including the theory of scaling of quasibrittle materials, constitutive equations, and stability problems of fracture, damage and inelastic behavior”

after late grandfather, professor of structural mechanics and rector (i.e. president) of ČVUT)²³.

1998 *Šolín Medal*, Czech Technical University, Prague (ČVUT)²⁴

1999 *Stodola Gold Medal*, Slovak Academy of Sciences, Bratislava.

2008 *Outstanding Contributions Award*, IACMAG (International Association for Computer Methods and Advances in Geomechanics).

2001 *ICOSSAR Lecture Award*, Int. Assoc. for Structural Safety and Reliability (Int. Conf., Newport Beach, CA, June 20, 2001).

2001 *D.M. Roy Lecture Award*, Am. Ceramic Society (2nd Roy Lecture, Annual Meeting, Indianapolis, April 24, 2001).

1977 *T.Y. Lin Prestressed Concrete Award* from ASCE (for the paper “Creep and Shrinkage in Reactor Containment Shells”, with D. Carreira and A. Walser, J. Struct. Div. 101, 1975, 2117–2131).

1976 *Walter L. Huber Civil Engineering Research Prize* from ASCE²⁵

2001– *ISI Award of “Highly Cited Scientist in Engineering”*²⁶

1992 *Best Engineering Book of the Year*—Award for Excellence from Assoc. of Am. Publishers (Professional & Scholarly Publ. Div.), for “Stability of Structures” (with L. Cedolin).

1992 *Meritorious Publication Award*—Structural Engineers Assoc. of Ill.; for the paper “Size effect on diagonal shear failure”, with M.T. Kazemi, ACI Struct. J.

2008 *Publication Merit Award*—Structural Engineers Assoc. of Ill.; for the paper “Justification of ACI-446 code provisions for shear design of reinforced concrete beams”, with Q. Yu et al., ACI Struct. J.

2015 *RILEM Outstanding Paper Award* (Extrapolation of short-time drying shrinkage tests based on measured diffusion size effect: concept and reality, by ZP Bžžant and A Donmez, in Materials and Structures).

1990 *Alexander von Humboldt Award of Senior U.S. Scientist*, from Federal Republic of Germany.

2006 *Mindlin Centennial Lecture*, US National Congress of Theoretical and Applied Mechanics, Boulder, CO, June 26, 2006.

1984 *Scientific and Technical Prize*, shared with Tong-Sheng Wang, from Ministry of Water Resources and Electric Power, Beijing, for paper “Random Temperature and Shrinkage Stresses in Aging Concrete”.

1982 *IR-100 Award* (with S. Meiri), from Industrial Research and Development, for developing a new triaxial-torsional high-temperature testing machine.

1955 *National Winner, Mathematical Olympics* (for high school students), Czechoslovakia.

Honorary Professor: 2007 National Taiwan University of Science & Technology, 2012 Southeast University, Nanjing, China, 2012 Xi’Yan Jiaotong University, Xi’Yan, China.

Other Honors:

1976 *Outstanding New Citizen*, from Metropolitan Chicago Citizenship Council.

2004 elected *Honorary President*, IA-FRAMCOS (Int. Assoc. of Fracture Mech. of Concr. Str.)

1997 elected Professor Emeritus (by courtesy), Czech Technical University, Prague.

1998 *Special Issue in Honor of Prof. Z.P. Bažant*, Int. J. of Solids & Structures, “Special Topics in Structural Mechanics and Materials”, Vol. 35, Numbers 31–32, pp. 4019–4350, John P. Dempsey and Gilles Pijaudier-Cabot, guest editors (20 papers).

2006 *Special Issue in Honor of Professor Zdeněk P. Bažant*, Int. J. of Fracture, Vol. 137, Numbers 1–4, pp. 1–294, G.J. Dvorak, guest editor (13 papers).

1998 *honored by a Workshop* (dedicated to Bažant’s 60th birthday) on Mechanics of Quasibrittle Materials sponsored by Electricité de France at Czech Techn. University, Prague, chaired by Z. Bittnar, G. Pijaudier-Cabot and B. Gérard (with dedicated Proc. volume).

2007 *honored by a Symposium* on Microplane and Multiscale Models at ECCOMAS Thematic Conference on Mechanics of Brittle Heterogeneous Materials in Prague, and pre-conference *ZPB70 Workshop* (at 70th birthday).

2007 *Asian Workshop in Honor of Bažant’s 70th Birthday*, 1st Annual Meeting of Taiwan Concrete Institute, National Taiwan University, Taipei.

2012 *Symposium in Honor of Bažant’s 75th Birthday*, at ASCE Annual Engineering Mechanics Institute Conference, University of Notre Dame, South Bend, IN

2012 *Symposium in Honor of Bažant’s 75th Birthday*, “From Nanopores to Large Structures: A Life Journey across Length Scales”, Society of Engineering Science Annual Meeting, Georgia Institute of Technology, Atlanta, Oct. 10, 2012.

2013 *Symposium in Honor of Bažant’s 75th Birthday*, 3rd Int. Conf. on Computational Fracture Mechanics (CFRAC-3), Prague, June 6–7.

2013 *ConCreep-9* (Int. Conf. on Creep, Shrinkage and Durability of Concrete Structures), named “Tribute to Prof. Bažant”

1991 *Government Lectureship Award*, National Science Council, Republic of China (Taiwan).

1978–79 *Guggenheim Fellowship*.

1996 *JSPS Fellowship*, Japan Soc. for Promotion of Science.

1988 *NATO Senior Guest Scientist Fellowship*, France.

1987 *Kajima Foundation Fellowship*, University of Tokyo.

2014 *Elected Council Member*, Czech Society of Sciences and Arts (Česká společnost pro vědu and umění, SVU), Washington, D.C.

Other:

1976 *Outstanding New Citizen*, from Metropolitan Chicago Citizenship Council.

1967–68 *Ford Science Foundation Fellowship*.

1966–67 *French Government ASTEF Fellowship*.

1964 *Second Prize* in Public Anonymous Competition on Danube Bridge Design, Czechoslovakia.

1958 & 1960 *National Winner* (twice), Student Research Competition in Civil Engineering, Czechoslovakia.

Listed: Who’s Who in America (since 1977), etc.

EDITORIAL BOARDS

Editor (in-Chief):

1. *Journal of Engineering Mechanics*, ASCE, 1988–94.

Board Member Handling and Accepting Papers:

2. *Regional Editor (U.S.)*, Intern. Jour. of Fracture (Kluwer Academic Publ.), 1991–.

3. *Editor*, Cement and Concrete Research (Pergamon Press, later Elsevier), 1970–2006.

4. *Editor*, Materials and Structures (RILEM, Paris), 1981–93; *Board Member*, 1993–2003.

²³“In recognition of lifelong successful scientific research”

²⁴Cited for “fundamental research contributions”.

²⁵Cited for “research on creep, inelasticity and moisture effects in concrete, nonlinear and time-dependent structural behavior, stability and fracture”.

²⁶One of the original top 100 in engrg.; www.ISIhighlycited.com

5. *Associate Editor*, Jour. of the Engrg. Mechanics Div., ASCE, 1973–77 and 1981–83.
6. *Associate Editor*, Applied Mechanics Reviews (ASME), 1987–95, 2007–.

Editorial Board Member:

7. Intern. J. of Numerical Methods in Engineering (J. Wiley), 1990–.
8. Archive of Appl. Mech. (Ingenieur-Archiv) (Springer, Berlin), 1990–.
9. Intern. J. of Numerical and Analytical Methods in Geomechanics (J. Wiley), 1979–.
10. Probabilistic Engineering Mechanics (Elsevier), 1986–.
11. Engineering Computations (Pineyard Press), 1987–.
12. Intern. J. of Damage Mechanics (Technomic Publ. Co.), 1992–.
13. Acta Mechanica (Springer), 1995–.
14. ASCE J. of Aerospace Engrg., 2002–.
15. Journal of Geomechanics ASCE, 2003– (formerly Intern. J. of Geomechanics, CRC Press, 2001–2003).
16. Journal of Nanomechanics and Micromechanics ASCE, 2015–.
17. Acta Mechanica Sinica, 2001–.

Other: 17. Advances in Structural Engineering—An Intern. J. (Multi-Science Publishing, Ltd., U.K.), 1996–2000. •

18. Int. J. of Computational Civil and Structural Engineering (Begell House, N.Y.), 1999–. • 19. Computer Modeling in Engineering Sciences (Sage Science Press), 1999–. • 20. International Journal of Structural Stability and Dynamics (Elsevier), 2001–. • 21. Dam Engineering (Wilmington Publishing, UK), 1992–. • 22. Mechanics of Advanced Materials and Structures (Taylor & Francis) 2002–. • 23. Interaction and Multiscale Mechanics: An International Journal (IMMIJ), 2008–. • 24. Multiscale Computational Modeling (Begell House, New York), 2003–. • 25. International Journal of Materials and Structural Reliability (Rangsit University, Thailand, publ.), 2003–. • 26. Computers, Materials & Continua (Tech Science Press, Encino, CA), 2004–. • 27. J. of Zhejiang Univ. SCIENCE, 2004–. • 28. Journal of Nuclear Energy & Power Generation Technologies, OMICS Publishing Group, 2010–. • 29. J. of Structural Fire Engrg., Multi-Science Publishing, 2010–. • 30. Acta Poytechnica (ČVUT Prague), 2015–. • 31. Beton (Prague) (in Czech language), 2017–.

Formerly: 32. Nuclear Engrg. and Design (North Holland), 1990–2001. • 33. Int. J. of Cohesive-Frictional Materials and Structures (J. Wiley) 1995–2000. • 34. J. of Advanced Cement-Based Materials, 1993–98 • 35. Archives of Mechanics (Sijthoff & Noordhoff), 1980–1990. • 36. FRAGBLAST—The Intern. Quarterly J. for Blasting and Fragmentation (Balkema), 1996–2004.

COMMITTEES AND SOCIETIES

- *President*, Society of Engineering Science, 1993 (*Board of Directors*, 1988–94).
- *President and Founder*, Intern. Assoc. for Fracture Mechanics of Concrete Structures (IA-FraMCoS, headquarters in Evanston, IL), 1991–93 (Board of Directors, 1991–2004).
- *President and Founder*, Intern. Assoc. for Concrete Creep and Durability (IA-ConCreep), 2001 (Board of Directors, 2001–08).
- *Chairman and Founder*, ACI Comm. 446, Fracture Mechanics, 1985–92.
- *Member*, U.S. National Committee on Theoretical and Applied Mechanics, 2000–2003.
- *Chairman*, Division H, Concrete Structures, Intern. Assoc. for Structural Mechanics in Reactor Technology (SMiRT), 1981–87, 1989–94 (and *Division Advisor*, 1994–96).
- *Chairman*, Division Q, Concrete and Nonmetallic Materials, *ibid.*, 1987–89.
- *Chairman*, ASCE Engrg. Mech. Div. Programs Committee, 1989–91.
- *Chairman*, ASCE Committee on Properties of Materials (Eng. Mech. Div.), 1975–77, 1981–83.
- *Chairman*, RILEM Comm. TC-69, Math. Models for Creep & Shrinkage of Concrete, 1981–88.
- *Chairman*, RILEM Comm. TC-107, Prediction of Creep & Shrinkage of Concrete, 1988–2000.

- *Chairman*, RILEM Comm. TC-QFS, Size effect and scaling of quasibrittle fracture, 1994–2000.
- *Chairman*, RILEM Comm. TC 242-MDC, Multi-decade creep and shrinkage of concrete: material model and structural analysis”, 2010–2015.
- *Member of Council*, Czechoslovak Society for Arts and Sciences (SVU, Společnost pro vědu a umění), Inc., Maryland, 2002–12.
- *Member*, Dept. of Homeland Security (DHS) Committee on Aircraft Impact Effects on Dams, 2007–09.
- *ACI Representative* at European Concrete Institute (CEB) Comm. on “Time-Dependent Deformations of Concrete”, 1971–80.
- *Member*, Task Committee of National Academy of Engineering on Status of Cement & Concrete R & D in the U.S., 1977–80.
- *Member*, Advisory Committee of National Academy of Engineering on Reinforced Concrete Floating Marine Structures, 1979–83.
- *Member* ACI Committee 209, Creep and Shrinkage in Concrete, 1970–. *Chairman*, Subcommittee 1 on Creep Mechanisms, 1970–75; *Chairman*, Subcommittee 2 on Creep Prediction, 1988–.
- *Member* Joint ASCE-ACI Comm. on Finite Element Analysis of R.C. Structures, 1979–84 (*Chairman*, Subcom. 5 on Time-Dependent Effects, 1979–85; *Chairman*, Subcom. on Fracture Mechanics, 1989–).
- *Member* of the NAS Committee on Human Rights, 1996–.
- *Member* of the Science Council, Czech Techn. Univ. Prague, 2005–. National Taiwan University of Science and Technology, 2007–.
- *Member* International Code Council (ICC), 2007–2012.
- *MTS Visiting Professor in Geomechanics* (chair endowed by Materials Service Corporation), Nov.-Dec. 2104.
- *OTHER: NSF Charter Panelist*, 1990–. ASCE-EMD Committee on Probabilistic Methods, 1984–88; ASCE-EMD Comm. on Structural Stability, 1989–; Joint ASCE-ACI Comm. 334 on Shell Design, 1977–1986; ACI Comm. 348 on Struct. Safety, 1985–93; ACI Comm. 231 on Concrete at Early Ages, 1994–; ACI Comm. 445 on Shear & Torsion, 1994–; ASME-AMD (Applied Mechanics Div.), Comm. on Fundamental Research, 1975–78; ASME-AMD Comm. on Constitutive Relations 1984–; ASME Materials Div. Ceramics Comm., 1994–; Composites Comm., 1998–; Probabilistic Methods Comm. 2002–. SEM (Society for Experimental Mechanics) Committee on Fracture Mechanics, 1986–; RILEM Committee TC50 on Fracture Mechanics of Concrete, 1979–85; RILEM Committee on Rheology of Young Concrete, 1976–82; RILEM Comm. TC89 on Applications of Fracture Mechanics, 1987–91; RILEM Comm. TC90 on Fracture of Concr. 1987–93; RILEM Comm. TC148-SSC on Strain-Softening 1992–; RILEM Comm. TC114 on Computer Models for Creep & Shr., 1988–; RILEM Comm. TC123 MMC, 1993–; RILEM Comm. on Creep Data Bank, 1994–; RILEM Comm. TC-SOC 2001–; SES (Soc. of Engrg. Science) Awards Committee, 1989–83; SEA0I (Struct. Engrs. Assoc. of Illinois) Awards Committee, 1988–90, & judge on Best Design Award Panel, 1992; ASTM Subcomm. on Fracture Testing of Rock, 1979–82; ASTM Committee C-09 on Concrete, 1981–89, 1994–; Am. Soc. of Composites 2002–; US Nat. Assoc. of Computational Mech., 1993–; SSRC (Struct. Stability Res. Council) Comm. on Nonl. Frame Analysis; Council for High Rise Buildings and Urban Habitat: *Chairman* of Creep Committee, 1992–94. Czech Techn. Univ. Prague, member of Scientific Council, 2006–. ASTM Committee F-17 on Skiing, 1984–. Nat. Acad. of Sci. Committee on Human Rights, 1997–. ASCE-SEI Comm. on Progressive Collapse, 2006–.

PUBLICATIONS

> 550 research papers in refereed journals (since 1958), plus 52 state-of-art review papers, 230 proceedings papers, 2 published course texts, 6 authored books, 20 edited books

1. Bažant: *Creep of Concrete in Structural Analysis* (in Czech). SNTL, Prague 1966 (186 pp.).
2. Bažant and L. Cedolin: *Stability of Structures: Elastic, Inelastic, Fracture and Damage Theories*, Oxford Univ.

Press, New York 1991, 2nd ed. Dover Publ., N.Y. 2002; 3rd ed. World Scientific Publ. 2010 (1009 pp.).

3. Bažant and M.F. Kaplan: *Concrete at High Temperatures*, Longman (Addison-Wesley), London 1996 (424 pp.).
4. Bažant and J. Planas: *Fracture and Size Effect in Concrete and Other Quasibrittle Materials*, CRC Press, Boca Raton and London 1998 (638 pp.).
5. M. Jirásek and Bažant: *Inelastic Analysis of Structures*, J. Wiley & Sons, London and New York 2002 (753 pp.).
6. Bažant: *Scaling of Structural Strength*. Hermes Penton Science, London 2002 (293 pp.) (French transl. 2004); 2nd updated ed. Elsevier 2005.
7. Bažant and Jia-Liang Le: *Probabilistic Mechanics of Quasibrittle Structures: Strength, Lifetime and Scaling*, Cambridge University Press 2017, in press.

PATENTS: 5 (in 1959: one of the earliest release ski bindings, mass-produced in Czechoslovakia, exhibited in New England Ski Museum, Franconia, NH); incl. pending NU patent of Stabilizing Grips for Postpeak Fracture Test of Textile Composites

CITATIONS

H-index: 120, citations: 64,000, i10 index: 599 (on Google, May 2018, incl. self-cit.). Citations since 2013: 22,000. Top cited paper: > 3,300 citations. Total number of refereed journal articles (incl. a dozen of invited book chapters): 640 (in Apr. 2018) Bažant is one of the original top 100 ISI Highly Cited Scientists in Engineering (all fields); www.ISIhighlycited.com.

SOCIETY MEMBERSHIPS

- American Society of Civil Engineers, Hon. Member and Fellow
- American Concrete Institute, Hon. Member and Fellow
- American Society of Mechanical Engineers, Hon. Member and Fellow
- == RILEM Hon. Member
- Czech Soc. for Mech. Czech Soc. of Civil Engrs., Czech Concrete Soc. – Hon. Member
- Society of Engrg. Science, Fellow
- American Academy of Mechanics, Fellow
- International Association of Computational Mechanics, Fellow
- RILEM (International Union of Research Laboratories in Materials and Structures, Paris), Fellow
- IA-FraMCoS (Int. Assoc. of Fracture Mech. of Concr. Str.), First President and Founder, Fellow, Honorary President
- IA-ConCreep (Int. Assoc. of Concrete Creep and Durability), First President and Founder
- American Institute of Aeronautics and Astronautics (AIAA)
- American Society of Composites (ASC)
- American Rock Mechanics Society (ARMA)

Also *Member*: NAS, NAE, Austrian, Italian, Spanish, Czech, Lombard, and European Academies, American Ceramic Society, American Society for Testing Materials, IABSE (International Association for Bridge & Structural Engineering), Society for Experimental Mechanics, Amer. Soc. of Rock Mechanics Composites, International Association for Structural Mechanics in Reactor Technology, Int. Soc. for Computational Mechanics, International Society of Soil Mechanics & Foundation Engineering, Structural Engineers Association of Illinois, Earthquake Engineering Research Institute, Materials Research Society, U.S. Committee on Large Dams, Structural Stability Research Council, Prestressed Concrete Institute, Intern. Soc. for Computational Engineering Science (founding member), Int. Assoc. for Bridge Maintenance and Safety, IALCEE Int. Assoc. Lifetime Cycle Eng.), ARMA (Am. Rock Mech. Assoc.). (Previously also: National Ski Association, Centennial Tennis Club, Kenilworth Sailing Club, Evanston Running Club, U.S. Olympic Society.)

GRADUATE STUDENT ADVISING

- At Northwestern: advisor of 57 Ph.D.'s, 15 M.S. theses; also advised 12 Ph.D. theses defended at other universities.

LECTURES AND SEMINARS

- 99 plenary conference lectures
- 43 endowed, named or distinguished university lectures

- 151 invited and sectional 'keynote' conference lectures
- 498 guest seminars at universities and institutes
- 462 other conference papers presented
- 18 intensive short courses at other universities & abroad

CONFERENCE CHAIRMAN/ORGANIZER

1. NSF Symposium on "Creep and Shrinkage in Concrete", Lausanne, 1980 (co-chairman with F.H. Wittmann).
2. NSF Workshop on "High Strength Concrete", Chicago, 1979 (co-chairman with S.P. Shah).
3. IUTAM Prager Symposium on "Mechanics of Geomaterials: Rocks, Concrete, Soils", Northwestern University, 1983 (chairman).
4. 4th RILEM International Conference on "Creep and Shrinkage of Concrete: Mathematical Modeling (CONCREEP-4)", Northwestern University, 1986 (chairman).
5. AFOSR Workshop on "Constitutive Relations and Modeling of Distribution Cracking, Strain-Softening and Localization", Institute for Mathematics, University of Minnesota, Minneapolis, 1987 (co-chairman with T. Belytschko).
6. France-U.S. Workshop on "Strain Localization and Size Effect Due to Cracking Damage", sponsored by NATO, Paris-Cachan, 1988 (co-chairman).
7. First International Symposium on "Fracture Mechanics of Concrete Structures" (FraMCoS1), Breckenridge, Colorado, 1992 (chairman).
8. CONCREEP-5—5-th RILEM Int. Conf. on Creep & Shrinkage of Concrete, Barcelona, 1993 (co-chairman with I. Carol).
9. Co-chairman (as ASCE-EMD Representative) of Joint ASME-ASCE-SES Mechanics Conference, Charlottesville, VA 1993 (chair: C.T. Herakovitch).
10. Europe-U.S. Workshop on Damage and Fracture in Quasibrittle Structures: Experiment, Modeling and Computer Analysis, sponsored by U.S. National Science Foundation and European Union, Prague, Sept. 1994 (co-chairman).
11. Co-Organizer and SES Representative, McNU'97—Joint ASCE-ASME-SES Mechanics Conference, Northwestern University, 1997.
12. Chairman, ONR Workshop on Fracture Scaling (sponsor: Office of Naval Research), University of Maryland, College Park, 1999.
13. CONCREEP-6 (co-chairman with F.J. Ulm and F.H. Wittmann)—6th Int. Conf. on Concrete Creep and Durability, M.I.T., 2001.
14. NSF Workshop on Model-Based Simulation of Material Durability (co-chairman with Z. Bittnar, G. Pijaudier-Cabot and Y. Xi), Czech Techn. Univ. Prague, 2002.

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CONSULTANT: – Argonne National Laboratory (staff consultant, 1974-94) – Oak Ridge National Laboratory – Sargent & Lundy, Chicago – ETA Corp., Chicago – Teng & Associates, Chicago – Ontario Hydro, Toronto – Swedish Cement & Concrete Institute (CBI) – WES (U.S. Army Corps of Eng.), Vicksburg – Sandia National Laboratory, Albuquerque – Portland Cement Association, Skokie – Babcock & Wilcox, Pittsburgh – Systems, Science & Software, La Jolla, CA – W.R. Grace, Columbia, MD – U.S. Forrest Products Laboratory, Madison – MGM Engineers, Pittsburgh – Euratom, Ispra, Italy – Quadrio, Milano – Institut für Werkstoffe im Bauwesen, Stuttgart University – Institut für Statik und Dynamik, Stuttgart University – Det Norske Veritas, Oslo – Analysis & Technology, Inc. – KAIST & Hyundai Corp., Korea – KEPRI (Korea El. Power Inst.), – Taisei Corp. (Tokyo) – Červenka Co. (Prague) – DTRA (Washington D.C.) – Boeing Co. – Los Alamos Nat. Lab. – ES3, San Diego, and other.

49 PhDs, 17 MS graduated. Courses taught: 1. Stability of Structures 2. Inelastic Analysis of Structures 3. Fracture of Concrete 4. Cohesive Fracture and Scaling 5. Continuum mechanics 6. Structural Analysis 7. Advanced Structural Analysis 8. Design of Reinforced Concrete 9. Design of Prestressed Concrete 10. Concrete Inelasticity 11. Behavior of Reinforced Concrete 12. Concrete Shells 13. Inelastic Structural Stability 14. Material Modeling Principles 15. Mechanics (Statics and Dynamics) 16. Mechanics of Materials I and II 17. Selected Topics in Materials Science

SHORT COURSES TAUGHT AT OTHER INSTITUTIONS Short intensive courses on Material Modeling of Concrete at Swedish Cement & Concrete Institute in Stockholm in 1976, Chalmers University in 1977, University of Mexico in 1977 and École nationale des ponts et chaussées in Paris 1978; short course on Finite Element Analysis of Concrete Structures at Politecnico di Milano 1978 and at T.U. Vienna in 1979, short course on Concrete Creep and Shrinkage at Politecnico di Milano in 1982; short courses on Inelastic Materials and Structures at EPFL Lausanne in 1983, 1988 and 1991 and at Lulea University in 1994; and a course on Fracture of Concrete at Politecnico di Milano in 1996 and 2000.

VISITING PROFESSOR • Swedish Cement and Concrete Institute (CBI), Royal Institute of Technology, Stockholm 1976–1977. • Chalmers University, Göteborg 1977. • University of Mexico 1979 • Ecole nationale des ponts et chaussées, Paris 1979 • Politecnico di Milano, 1982, 1993, 1996, 2000, 2002. • E.P.F.L. (Swiss Federal Institute of Technology), Lausanne 1983, 1984, 1989, 1997, 2001. • E.N.S. (Ecole Normale Supérieure), Paris–Cachan 1988, 1992, 2000. • Technische Universität München, Germany 1990, 1991. • Technische Universität Stuttgart, Germany 1991, 1992. • I.N.S.A. (Institut National des Sciences Appliquées), Lyon–Villeurbanne, France, 1993. • Lulea University, Sweden, 1994. • E.T.H. (Swiss Federal Institute of Technology), Zürich 1995. • National University of Singapore, 2001. • Czech Techn. University, Prague, intermittently 2000–2014. • National Taiwan University, Yaipei, 2007 (honorary prof.). • Southeast University, Nanjing, China, 2012 (honorary prof.) • Xi'an Jiatong University, Xi'an, China, 2012 (honorary prof.) • University of Minnesota, Minneapolis (MTS Vis. Prof.) 2014, 2017.

VISITING SCIENTIST

• CEBTP (Centre d'Etude du Bâtiment et des Travaux Publics), Paris, 1966–67; • University of California, Berkeley 1968–69; again 1978; • Stanford University, 1978; • E.T.H., Zürich 1979; • California Institute of Technology, 1979; • M.I.T., 1979; • Technische Universität, Wien, 1981; • University of Cape Town, 1984; • University of Adelaide, 1985; • University of Tokyo, 1987, 1996; • Universidad Politecnica de Madrid, Spain, 1992; • Universidad Politecnica de Catalunya, Barcelona, 1994, 1999. • Lulea University, Sweden, 1994. • Laboratoire central des ponts et chaussées (LCPC), Paris, 1998. • University of Palermo, 1998.

FOREIGN LANGUAGES

Foreign languages: Czech (native), French, German, Russian (lectured in all four).

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EDUCATION

Northwestern University, Evanston, Illinois, USA

Ph.D., Structural Engineering and Mechanics, June, 2010

- Thesis Title: “Probabilistic and energetic scaling of fracture of quasibrittle materials.”
- Thesis Advisor: Zdeněk P. Bažant

National University of Singapore, Singapore

M.Eng, Structural Engineering, June, 2005

- Thesis Title: “Dynamic modeling of lightweight high-strength concrete under impact.”

National University of Singapore, Singapore

B.Eng (First Class Honors), Major: Civil Engineering, Minor: Business, June, 2003

- Dissertation Title: “Numerical analysis of elastica: A generic algorithm and quasi-Newton method approach.”

HONORS AND AWARDS

- Best Paper Award, 48th U.S. Rock Mechanics/Geomechanics Symposium, American Rock Mechanics Association, 2014
- Best Teacher Award: Bonestroo, Rosene, Anderlik and Associates Undergraduate Faculty Award, University of Minnesota, 2012
- Royal E. Cabell Fellowship, Northwestern University, 2009
- Walter P. Murphy Fellowship, Northwestern University, 2006-2009
- Research Scholarship, National University of Singapore, 2003–2004
- Dean’s List, Faculty of Engineering, National University of Singapore, 1999–2002
- Undergraduate Scholarship, National University of Singapore, 1999–2003

PROFESSIONAL EXPERIENCE

University of Minnesota, Minneapolis, MN, USA.

Assistant Professor

September 2010 -

Northwestern University, Evanston, IL, USA.

Graduate Research Assistant

September 2006 - June 2010

ARUP

Structural Engineer

May 2005 - August 2006

RESEARCH
INTERESTS

Fracture Mechanics
Probabilistic Mechanics
Computational Mechanics
Structural Reliability
Scaling

PROFESSIONAL
ACTIVITIES

Member, American Society of Civil Engineers
EMI Probabilistic Methods Committee
SEI Disproportionate Collapse Technical Committee
Member, American Concrete Institute
377 – Performance-Based Structural Integrity & Resilience of Concrete Structures
446 – Fracture Mechanics of Concrete

BOOK CHAPTERS

- [1] Z. P. Bažant and **J.-L. Le**, (2008) “Recent progress in energetic probabilistic scaling laws for quasi-brittle fracture”, International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Scaling in Solid Mechanics, F. Borodich Eds., Springer, 135-144.
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PUBLICATIONS

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- [7] **J.-L. Le**, Z. P. Bažant, and M. Z. Bazant, (2009) “Crack growth law and its consequences on lifetime distributions of quasibrittle structures”, *Journal of Physics D: Applied Physics*, 42, 214008 (8 pp).

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- [25] **J.-L. Le** and Z. P. Bažant (2014) “A finite weakest link model of lifetime distribution of quasibrittle structures under fatigue loading”, *Journal of Mathematics and Mechanics of Solids*, Special issue honoring Professor G. I. Barenblatt, Vol. 19, 56-70.
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- [27] **J.-L. Le**, M. Pieuchot, and R. Ballarini (2014) “Effect of stress singularity magnitude on scaling of strength of quasibrittle structures”, *Journal of Engineering Mechanics, ASCE*, 140(5), 04014011.
- [28] **J.-L. Le** and B. Xue (2014) “Probabilistic analysis of reinforced concrete frame structures against progressive collapse”, *Engineering Structures*, 76, 313–323.
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- [31] **J.-L. Le**, J. Manning, and J. F. Labuz (2014) “Scaling of fatigue crack growth in a rock”, *International Journal of Rock Mechanics and Mining Sciences*, (in press)
- [32] **J.-L. Le** and Z. P. Bažant (2014) “Mechanics-based modeling of strength distribution of concrete structures: Problems and progress”, *American Concrete Institute Special Publication*, (in press)
- [33] B. Xue and **J.-L. Le** (2014) “A stochastic numerical model for progressive collapse of reinforced concrete buildings”, *Journal of Structural Engineering, ASCE*, (under review)
- [34] **J.-L. Le**, Z. Zhu and R. Ballarini (2014) “Modeling of strength statistics of polycrystalline MEMS structures”, *Journal of American Ceramics Society* (in preparation)
- [35] **J.-L. Le**, M. DeHarnaise, B. Xue, S.-D. Pang and H. Du (2014) “A two-scale thermomechanical computational model for reinforced concrete frames”, *Engineering Structures*, (in preparation)

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CONFERENCE
PROCEEDINGS

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- [2] Z. P. Bažant, F. C. Caner, **J.-L. Le**, and Q. Yu, “Scaling of strength of metal-composite joints”, Proceedings of 49th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Schaumburg, IL, April 2008, (paper No. 2093).
- [3] Z. P. Bažant and **J.-L. Le**, “Atomistically based prediction of size effect on strength and lifetime of composites and other quasibrittle structures”, Proceedings of 49th AIAA/ ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Schaumburg, IL, April, 2008, (paper No. 2294).
- [4] **J.-L. Le** and Z. P. Bažant “ Size effect on probability distribution of fatigue lifetime of quasibrittle structures.” Proceedings of 11th International Conference on Applications of Statistics and

Probability in Civil Engineering, Taylor & Francis, London, 1291–1298, ETH Zurich, Switzerland, August 2011.

[5] **J.-L. Le** and B. Xue, “Probabilistic analysis of vulnerability of reinforced concrete buildings against progressive collapse.” Proceedings of Structural Engineering Institute Congress, ASCE, Pittsburg, May 2013, pp. 20–31.

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[7] **J.-L. Le**, A. Cannone Falchetto and M. O. Marasteanu, “Determination of strength statistics of quasibrittle structures based on mean size effect analysis” Proceedings of 11th International Conference on Structural Safety and Reliability, New York City, June 2013.

[8] Z. P. Bažant and **J.-L. Le**, “Scaling of statistics of strength and lifetime of quasibrittle structures: Problems and progress” Proceedings of 11th International Conference on Structural Safety and Reliability, New York City, June 2013.

[9] Z. P. Bažant, M. H. Hubler, M. Salviato, and **J.-L. Le**, “Scaling of failure probability of quasibrittle structures with large cracks” Proceedings of 11th International Conference on Structural Safety and Reliability, New York City, June 2013.

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CONFERENCE
PRESENTATIONS

[1] **J.-L. Le**, C. Y. Liaw and C. G. Koh, “Constrained optimization for large deflection elastic problem: A genetic algorithm and quasi-Newton method approach”, Proceedings of 16th KKCNN Symposium on Civil Engineering, Gyeongju, Korea, December 2003, pp 337-342.

[2] **J.-L. Le**, C. G. Koh and T. H. Wee, “Modeling of lightweight high-strength concrete under impact”, Proceedings of 30th anniversary conference on “Our World in Concrete and Structures”, Singapore, August 2005, pp 329-336.

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Patras, Greece, July 2007, pp 1-10.

[6] Z. P. Bažant and **J.-L. Le**, “Size effect on probability of quasibrittle failure and lifetime: From atomic to Structural scale”, Symposium on Physical Aspects of Fracture Scaling and Size Effects, Plenary Opening Lecture, Monte Verita, Switzerland, March 2008.

[7] Z. P. Bažant, and **J.-L. Le**, ”Size effect on strength and lifetime distribution of quasibrittle structures, implied by interatomic bond break activation”, Inaugural International Conference of the Engineering Mechanics Institute, University of Minnesota, Minneapolis, Minnesota, MN, May 2008.

[8] S. D. Pang, **J.-L. Le** and Z. P. Bažant, “Size effect on probability of quasibrittle failure and lifetime: from atomistic to structural scale”, Proceedings of 22nd International Congress of Theoretical and Applied Mechanics, Adelaide, Australia, August 2008.

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[10] **J.-L. Le**, Z. P. Bažant, Q. Yu, and F. C. Caner, “Size effect on strength of bi-material joints for hybrid hull”, 45th Society of Engineering Science Annual Technical Meeting, University of Illinois, Urbana-Champaign, October 2008.

[11] Z. P. Bažant, **J.-L. Le**, and S. D. Pang, “Strength of quasibrittle ceramics: Impossibility of finite Weibull threshold and statistical justification in nano-mechanics”, 45th Society of Engineering Science Annual Technical Meeting, University of Illinois, Urbana-Champaign, October 2008.

[12] Z. P. Bažant, **J.-L. Le**, F. C. Caner, and Q. Yu, “Size effect on strength of bi-material joints of steel with fiber-polymer composite”, IMECE 2008: Mechanics of Solids, Structures and Fluids, Vol. 12, November 2008, pp 741-747.

[13] Z. P. Bažant, Q. Yu, **J.-L. Le**, C. G. Hoover and F. C. Caner, “Plastic-fracturing transition of size effect in fiber composites”, International Symposium on Plasticity, Keynote Lecture, St Thomas, January 2009.

[14] Z. P. Bažant, **J.-L. Le**, Q. Yu, C. G. Hoover and F. C. Caner, “Scaling of strength of fiber composite structures”, 2nd ECCOMAS Thematic Conference on the Mechanical Response of Composites, Keynote Lecture, Imperial College, London, April 2009.

[15] Z. P. Bažant, **J.-L. Le**, and M. Z. Bazant, “Size effect on strength and lifetime distributions of quasibrittle structures implied by atomistic fracture mechanics.” ASCE-ASME-SES Conference on Mechanics and Materials, Blacksburg, VA, June 2009.

[16] **J.-L. Le**, F. C. Caner, Q. Yu and Z. P. Bažant, “Size effect on strength of bi-material joints: Computational approach versus analysis and experiment”, Proceedings of 12th International Conference on Fracture, Ottawa, Ontario, Canada, July 2009, (in CD format), pp 1-10.

[17] Z. P. Bažant, **J.-L. Le**, and Q. Yu “Quasibrittle size effect: Problems and progress.”, Proceedings of 12th International Conference on Fracture, keynote lecture, Ottawa, Ontario, Canada, July 2009, (in CD format), pp 1-10.

[18] Z. P. Bažant, **J.-L. Le**, and M. Z. Bazant ”Atomistic fracture and nano-macro transition

for strength and lifetime statistics of quasibrittle structures.”, Proceedings of 12th International Conference on Fracture, keynote lecture, Ottawa, Ontario, Canada, July 2009, (in CD format), pp 1-10.

[19] Z. P. Bažant, **J.-L. Le**, Q. Yu, C. G. Hoover and F. C. Caner “Quasibrittle fracture and scale transitions: Problems, Progress, Practice.” Proceedings of 6th International Congress of Croatian Society of Mechanics, Plenary paper, Dubrovnik, Croatia, September 2009.

[20] Z. P. Bažant and **J.-L. Le** “Size effect on strength and lifetime distributions of quasibrittle structures.” Proceedings of ASME International Mechanical Engineering Congress and Exposition, Boston, MA, November 2009, pp. 1-7 (in CD format), reprints published in *Proceeding of Indian Academy of Sciences* (Invited paper), Vol. 37, 2012, 17–31.

[21] Z. P. Bažant, **J.-L. Le** and Q. Yu “Statistical aspects of quasibrittle size effect and lifetime, with consequences for safety and durability of large structures.” Proceedings of 7th International Conference on Fracture Mechanics of Concrete, Jeju, Korea, May 2010, pp.1-8 (in CD format).

[22] Z. P. Bažant, **J.-L. Le** and C. G. Hoover “Nonlocal boundary layer (NBL) model: Overcoming boundary condition problems in strength statistics and fracture analysis of quasibrittle materials.” Proceedings of 7th International Conference on Fracture Mechanics of Concrete, Jeju, Korea, May 2010, pp. 1-8 (in CD format).

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[24] Z. P. Bažant and **J.-L. Le** “Nano-mechanics based modeling of strength and lifetime statistics of quasibrittle structures.” Conference of the Engineering Mechanics Institute, University of Southern California, August 2010.

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[26] Z. P. Bažant and **J.-L. Le** “Nano-mechanics based theory of lifetime statistics of quasibrittle structures under static and cyclic fatigue.” Proceedings of ASME International Mechanical Engineering Congress and Exposition, Vancouver, November 2010.

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[28] Z. P. Bažant, **J.-L. Le** and J. Eliáš “Black holes in probability tails: Challenge for safety analysis of quasibrittle structures” Proceedings of XI International Conference on Computational Plasticity Fundamentals and Applications, Barcelona, Spain, September 2011.

[29] **J.-L. Le** “Scaling of strength of bimaterial quasibrittle structures with weak stress singularities” Proceedings of Conference of the Engineering Mechanics Institute, South Bend, June 2012.

[30] **J.-L. Le**, A. Cannone Falchetto and M. O. Marasteanu, “Determination of strength distribution of quasibrittle structures from size effect analysis.” Proceedings of Conference of the Engineering Mechanics Institute, South Bend, June 2012.

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structures.” Proceedings of Conference of the Engineering Mechanics Institute, South Bend, June 2012.

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[40] **J.-L. Le** and R. Ballarini. “A finite weakest link model of failure statistics of polycrystalline silicon MEMS devices.” Proceedings of ASME International Mechanical Engineering Congress and Exposition, San Diego, November 2013.

[41] **J.-L. Le** and B. Xue. “Effect of stress singularities on scaling of fracture of metal-composite hybrid structures.” Proceedings of ASME International Mechanical Engineering Congress and Exposition, San Diego, November 2013.

[42] **J.-L. Le** “Size effect on reliability indices and safety factors of quasibrittle structures.” Proceedings of Conference of the Engineering Mechanics Institute, Hamilton, Canada, August 2014.

[43] **J.-L. Le**, J. Manning and J. F. Labuz “Size effect on fatigue crack kinetics of sandstone.” Proceedings of Conference of the Engineering Mechanics Institute, Hamilton, Canada, August 2014.

[44] M. DesHarnais, **J.-L. Le** and B. Xue “Numerical modeling of fire-induced collapse of reinforced concrete frame structures.” Proceedings of Conference of the Engineering Mechanics Institute, Hamilton, Canada, August 2014.

[45] B. Xue and **J.-L. Le** “Probabilistic analysis of reinforced concrete structures against progressive collapse.” ACI Fall Convention, Washington, D.C., October 2014.

DISCUSSIONS AND
CLOSURES

[1] Z. P. Bažant and **J.-L. Le**, (2008) “Closure to “Mechanics of Progressive Collapse: Learning from World Trade Center and Building Demolitions” by Zdeněk P. Bažant and Mathieu Verdure ”, *Journal of Engineering Mechanics, ASCE*, 134, No. 10, 917-923.

[2] **J.-L. Le** and Z. P. Bažant, (2010) “Closure to “What did and did not cause collapse of WTC twin towers in New York” by Zdeněk P. Bažant, Jia-Liang Le, Frank R. Greening, David B. Benson”, *Journal of Engineering Mechanics, ASCE*, 136, No. 7, 934-935.

[3] Z. P. Bažant and **J.-L. Le**, (2012) “Closure to “Why the observed motion history of World Trade Center towers Is smooth?” by Jia-Liang Le and Zdeněk P. Bažant”, *Journal of Engineering Mechanics, ASCE*, 138, No. 10, 1300-1301.

PATENTS

[1] **J.-L. Le**, M. O. Marasteanu, and T. Mugurel, *Compositions Including Asphalt and Graphite Component*, U.S. Provisional Patent No. 61/977,706

TEACHING

University of Minnesota

1. Steel Design II (Level: Undergraduate)
2. Linear Structural Analysis (Level: Undergraduate)
3. Inelastic Analysis of Structures (Level: Graduate)
4. Fracture and Scaling (Level: Graduate)

Northwestern University

1. Stability of Structures (Level: Graduate)
2. Inelastic Analysis of Structures (Level: Graduate)
3. Cohesive Fracture and Scaling (Level: Graduate)

REVIEWS

[1] Journals:

Acta Geotechnica

Applied Mechanics Reviews

Engineering Fracture Mechanics

Engineering Structures

International Journal of Fracture

International Journal for Numerical and Analytical Methods in Geomechanics

International Journal of Rock Mechanics and Mining Sciences

International Journal of Solids and Structures

Journal of Applied Mechanics

Journal of Composite Materials

Journal of Engineering Mechanics

Journal of the Mechanics and Physics of Solids

Korean Journal of Civil Engineering (Associate Editor)

Proceedings of the Royal Society London A

Structural Control and Health Monitoring

[2] Proposals:

NSF CMMI/Mechanics of Materials, 2011

NSF CMMI/Structural Materials and Mechanics, 2011, 2013

Swiss National Science Foundation, Div. Mathematics, Physical and Engineering Sciences, 2014

GRADUATE
STUDENTS ADVISED

[1] Augusto Cannone Falchetto, Ph.D. (2012), *Strength Size Effect in Asphalt Binders and Mixtures at Low Temperature*. (co-advisor: Prof. Mihai Marasteanu)

[2] Jonathan Manning, M.S. (2013), *Size Effect on Fatigue Crack Growth of a Quasibrittle Material*. (co-advisor: Prof. Joseph F. Labuz)

[3] Marie DesHarnais, M.S. (2014), *A Two-Scale Thermomechanical Computational Model for Reinforced Concrete Frame Structures*.

[4] Bing Xue, Ph.D. (2015, Expected), *Reliability-Based Analysis and Design of Reinforced Concrete Buildings Against Progressive Collapse*.

[5] Rose Milavitz, M.S. TBD

[6] Zhiren Zhu, M.S. TBD

INVITED ACADEMIC VISITS [1] Department of Civil and Environmental Engineering, National University of Singapore, May 18 - Jun. 18, 2011 (Host: Dr. S.-D. Pang)

[2] Department of Civil and Environmental Engineering, National University of Singapore, Dec. 21, 2012 - Jan. 10, 2013 (Host: Dr. S.-D. Pang)

INVITED LECTURES [1] Ecole Polytechnique Fédérale de Lausanne, School of Architecture, Civil and Environmental Engineering, “Reliability analysis of quasibrittle structures based on atomistic fracture mechanics”, Lausanne, Switzerland, April 2009

[2] ExxonMobil Upstream Research Co., Arctic, Offshore and Pipeline Group, “Scaling of strength of hybrid ship hull”, Houston, TX, January 2010

[3] California Institute of Technology, Graduate Aerospace Laboratories, “Nano-mechanics based theory of strength and lifetime statistics of quasibrittle structures, and analogy with high- k gate dielectrics”, Pasadena, CA, February 2010

[4] North Carolina State University, Department of Civil, Construction and Environmental Engineering, “Nano-mechanics based theory of strength and lifetime statistics of quasibrittle structures, with consequences for structural reliability”, Raleigh, NC, February 2010

[5] University of Minnesota, Department of Civil Engineering, “Nano-mechanics based theory of strength and lifetime statistics of quasibrittle structures, with consequences for structural reliability”, Minneapolis, MN, March 2010

[6] Swiss Federal Institute of Technology, Zurich (ETH Zürich), Department of Civil, Environmental and Geomatic Engineering, “Nano-mechanics based theory of strength and lifetime statistics of quasibrittle structures, with consequences for structural safety”, Zurich, Switzerland, March 2010

[7] Rice University, Department of Civil and Environmental Engineering, “Nano-mechanics based theory of strength and lifetime statistics of quasibrittle structures, with consequences for structural reliability”, Houston, TX, March 2010

[8] National University of Singapore, Department of Civil and Environmental Engineering, “Scaling of strength of metal-composite hybrid joints”, Singapore, June 2011

[9] University of Minnesota, Department of Aerospace Engineering and Mechanics, “Scaling of fatigue lifetime of quasibrittle structures, and analogy with breakdown of gate dielectrics”, Minneapolis, MN, November 2011

[10] National University of Singapore, Department of Civil and Environmental Engineering, “Risk assessment of reinforced concrete frame structures against progressive collapse”, Singapore, January 2013

[11] Army Research Laboratory, Weapons and Materials Research Directorate, “Scaling of strength statistics of quasibrittle structures: Problems and progress”, Aberdeen, MD, August 2013

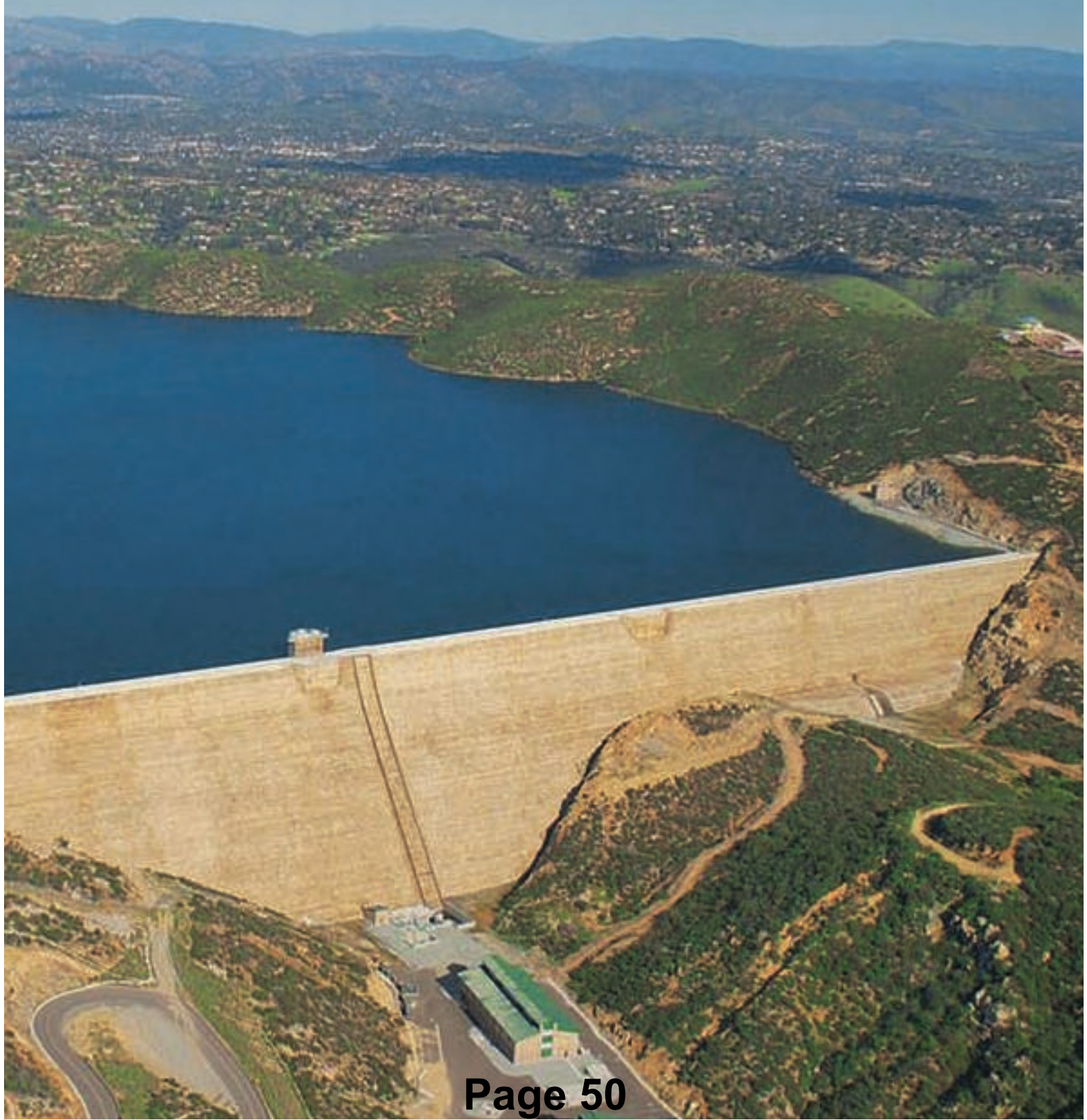
[12] Massachusetts Institute of Technology, Concrete Sustainability Hub, Department of Civil and Environmental Engineering, “Energetic-statistical scaling of quasibrittle fracture”, Cambridge, MA, October 2013

[13] University of Pittsburgh, Department of Civil and Environmental Engineering, “Probabilistic Analysis of Reinforced Concrete Buildings Against Progressive Collapse”, Pittsburgh, PA, March 2014

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EMI 2015 International Conference Hong Kong

K. T. Chau, M.ASCE

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The Engineering Mechanics Institute (EMI) of ASCE was created on October 1, 2007, and it replaced the former ASCE Engineering Mechanics Division. In conjunction with the annual EMI conference held in North America in the summer, Professor Alex Cheng proposed that an additional EMI international conference could be organized annually in the winter. With the help of Dr. Amar Chaker, director of EMI, and Miss Verna Jameson, manager of EMI, this idea was seriously pursued and materialized into the present EMI 2015 Hong Kong conference. The EMI 2015 International Conference at Hong Kong was the first ever EMI international conference held outside North America, and it was held on the beautiful campus of the Hong Kong Polytechnic University from January 7–9, 2015. It also reflects EMI's ambition to extend its activities to a global level. The continuous support and encouragement from previous EMI presidents (Alex Cheng, Roger Ghanem, and Roberto Ballarini), EMI Conference Committee (Muhammad R. Hajj), EMI director (Amar Chaker) and EMI manager (Verna Jameson) is most appreciated. Without the hard work of the International Scientific Committee, Executive Organizing Committee, Local Organizing Committee, symposium organizers, Program Committee, and reviewers, the conference would not have been possible.

The committee members are recognized herein:

- Conference Chair: K. T. Chau;
- Secretary: Andy Leung;
- Executive Organizing Committee: Robin H. C. Wong, J. B. Zhu, Y. M. Cheng, and H. Y. Lin;
- Local Organizing Committee: S. L. Chan, K. W. Chau, J. G. Dai, C. W. Li, Y. Q. Ni, Onyx W. H. Wai, Y. Xia, J. H. Yin, S. Y. Zhu;
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- Reviewers for the Conference: Li-Wei Liu, Jianrong Lu, Wen Xiong, Yang Liu, Seyed Kazem Sadat Shokouhi, Xuan Kong, Jian Li, Jian-Ying Wu, Bin Sun, Yi Yang, Hongfen Zhao, Shao Lei Huo, Muhsin Elie Rahhal, Runtao Zhan, Yufen Zhou, Lixin Wang, Jun Won Kang, Hao Wang, Lei Wang, Jianfu Shao, Junsong Liang, Walter Loo, Mingxing Zhu, and Jianbo Zhu;

- Program Committee Members: Kevin Wong, Andy Leung, Wai Ching Sun, Teng-Fong Wong, Tat Fu, John Brigham, Yang Xiang, C.W. Lim, Tommy Hung Tin Chan, Wen Chen, Alexander Cheng, Euclides Mesquita, Wenjing Ye, Jidong Zhao, C.W. Li, Christopher Leung, Onyx Wai, Jian-Guo Dai, Yong Xia, Yuhong Wang, and Nimal Rajapakse.

Among the 120 participants, about 40 were students. It is a healthy sign that young successors in engineering mechanics are emerging at the international level and are taking active roles in academic exchanges. A group photograph taken on the first day is shown in Fig. 1. Among the registered presenters, participants came from 20 different countries or regions, including mainland China (29), Hong Kong, China (18), United States (15), Korea (8), Brazil (4), France (4), India (4), Thailand (3), Australia (3), Singapore (2), Lebanon (2), Taiwan, China (2), United Kingdom (2), Iran (1), Israel (1), Spain (1), Canada (1), Germany (1), and Switzerland (1). This list, however, does not include the EMI delegation from the United States and those keynote speakers. This demographic distribution made this truly an international event. There were a total of 103 technical presentations, plus 6 plenary keynote lectures. These presentations were allocated to 21 sessions, including 11 special symposia organized by ASCE's international scientific committees and 10 regular sessions. The 11 special symposia included two sessions of "Geomaterials: Poromechanics and Failure" [organized by Teng-Fong Wong of Chinese University of Hong Kong (CUHK), WaiChing Sun of Columbia University, and Jidong Zhao of Hong Kong University of Science and Technology (HKUST)], two sessions of "Analytical and Computational Modelling of Advanced Materials" (organized by Nimal Rajapakse of Simon Fraser University and Euclides Mesquita of University of Campinas), two session of "Structural Health Monitoring" [organized by Tommy Chan of Queensland University of Technology, S. S. Law of Beijing Jiaotong University, and Y. Q. Ni of Hong Kong Polytechnic University (HKPolyU)], "Boundary-Element Method (BEM) and Meshless Method" (organized by Wen Chen of Hohai University, Zhenhan Yao of Tsinghua University, Jeng-Tzong Chen of National Taiwan Ocean University, Wenjin Ye of



Fig. 1. Group photograph taken on January 7, 2016, during the EMI 2015 HK International Conference

HKUST, and Alex Cheng of University of Mississippi), “Smart Structure in Hazard Mitigation” (organized by Tat Fu of University of New Hampshire), “Fracture Mechanics for Cementitious Materials” (organized by Christopher Leung of HKUST), “Soil-Structure Interactions” (organized by Andy Leung of HKPolyU), and “Forward and Inverse Problems in Elasticity and Applied Mechanics” (organized by John Brigham of University of Pittsburgh and Ron Pak of University of Colorado). The 10 regular sessions were on “Geomechanics,” “Biomechanics,” “Fluid Mechanics,” “Fracture and Damages” (two sessions), “Man-Made and Natural Hazards,” “Structural Mechanics,” “Earthquake Engineering,” “Wind Engineering,” and “Landslides and Flooding.”

The six international leading researchers who delivered plenary keynote lectures on various topics of engineering mechanics were

1. Professor Zdenek Bazant (Northwestern University);
2. Professor Ronaldo I. Borja (Stanford University);
3. Professor Alexander H. D. Cheng (University of Mississippi);
4. Professor Roger Ghanem (University of Southern California);
5. Professor Philip L.-F. Liu (Cornell University); and
6. Professor You-lin Xu (HKPolyU).

Figs. 2–7 show the plenary keynote speakers receiving a plaque from EMI President Professor Roberto Ballarini.

The travel expenses of the keynote speakers were sponsored financially and jointly by the University, faculty, and Department through the Faculty Conference Support Scheme. The conference organizers are most indebted to the continuous support from the former dean, Professor J. G. Teng, the current dean, Professor Y. L. Xu, and the provost and deputy president, Professor Philip Chan. The financial support from Rupert Leung through Hyder Consulting Limited is much appreciated. Nonfinancial sponsors of the conference include the International Association for Life-Cycle Civil Engineering (IALCCE), International Association for Bridge Maintenance and Safety (IABMAS), ASCE Hong Kong Section, TC103 of International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), and Hong Kong Theoretical and Applied Mechanics (HKSTAM). Among the numerous people helping this conference, a special thank goes to Dr. Andy Leung for serving as the conference secretary.

A postconference survey done independently by EMI shows that the event satisfaction index was 3.68 out of 4, which is the highest ever obtained for an EMI conference. The overall conference was rated as “excellent” by 68.2% of the respondents and “very good” by 31.8%.



Fig. 2. Professor Alexander H.D. Cheng (University of Mississippi) receiving a plaque from the president of EMI, Professor Roberto Ballarini



Fig. 4. Professor You-Lin Xu (Hong Kong Polytechnic University) receiving a plaque from the president of EMI, Professor Roberto Ballarini

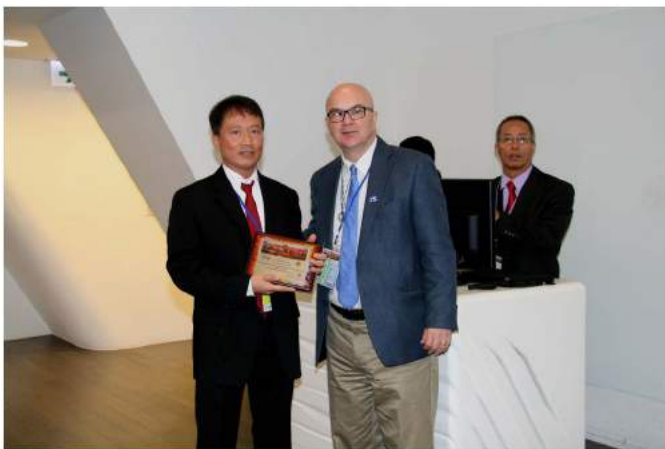


Fig. 3. Professor Ronaldo I. Borja (Stanford University) receiving a plaque from the president of EMI, Professor Roberto Ballarini



Fig. 5. Professor Roger Ghanem (University of Southern California) receiving a plaque from the president of EMI, Professor Roberto Ballarini



Fig. 6. Professor Philip L.-F. Liu (Cornell University) receiving a plaque from the president of EMI, Professor Roberto Ballarini



Fig. 7. Professor Zdenek Bazant (Northwestern University) receiving a plaque from the president of EMI, Professor Roberto Ballarini

With the kind agreement from the editor of the *ASCE Journal of Engineering Mechanics*, Professor Roberto Ballarini, it was decided that a collection of papers from the conference would be published as a special issue entitled “EMI 2015 International Conference Hong Kong.” After a few rounds of rigorous paper review cycles, a total of nine technical papers were accepted. These nine papers cover a wide range of problems in the area of unsaturated soil mechanics, geomechanics, contact problems, structural damages, dynamic elasticity, fiber-reinforced composites, and damage detections of structures. The methods employed by these

papers include experiments, the use or development of elastic-plastic solution, coupled Fredholm–Volterra integral equations, and the use of numerical simulations via the finite-element method (FEM), BEM, and distinct-element method (DEM).

In particular, the paper by Zhai et al. is an experimental study on the electrical contact resistance on rough surface, with potential applications to diagnostic tribology. It was found that the electrical resistance depends on the applied stress as a power-law relation with its exponent closely related to the surface topography. Yu and Zhu developed a framework for structural damage prognosis for truss bridges based on higher statistical moments of structural response and fuzzy *c*-means clustering techniques, verified by laboratory tests on a six-bay bridge model. With its potential applications to the design of anchorage type of foundation, the paper by Mohtati et al. considered the horizontal harmonic vibrations of a rigid disk embedded in a transversely isotropic trimaterial elastic full-space through coupled Fredholm–Volterra integral equations. Investigating the micromechanics of partially saturated soils, Wang and Sun conducted DEM simulations to study the stress anisotropy in wetted granular materials as a function of stress path through the use of tensorial Bishop’s coefficient. Through the use of a super-element resulting from Guyan condensation technique, Liu et al. proposed a virtual distortion method to improve the updating of FEM models of large-scale bridges using static deformation. With the advancement of smart piezoelectric fiber-reinforced composites in mind, Sapsathiam et al. considered a micromechanics model for the effective properties of piezoelectric fiber-reinforced composite materials with imperfect fiber-matrix interface bonding through the use of the BEM. Through the use of a new damage-sensitive feature, Yu and Lin considered a cloud-computing-based time-series analysis for structural damage detection. To study the sinkhole formation in the Dead Sea area, Linker and Klar used the Brillouin optical time domain reflectometer (BOTDR) (an optical measurement technique that provides distributed measurements of strain along tens of kilometers of conventional optical fibers, based on the Brillouin frequency shift of back-scattered light) to detect the formation of sinkholes through the development of a closed-form solution for the strain profile due to spherical voids in elastic-plastic soil. Finally, to fuse the data collected from different types of sensors, Lin and Xu proposed a two-stage covariance-based multisensing damage-detection method, through the use of FEM calculations.

Although the theme of the EMI 2015 International Conference Hong Kong was “Mechanics for Civil Engineers against Natural Hazards,” the conference’s technical program covered nearly all domains of engineering mechanics, and this is also reflected in the diversity of the nine accepted papers in this special issue. Finally, the conference team is most grateful to those anonymous reviewers who helped to review the submitted papers and offered their generous suggestions.

Awarded Contracts for External Experts to Support the NIST World Trade Center (WTC) Disaster Investigation

Contract No.	Awarded to	Date Awarded
SB1341-03-W-0715 (Area 3)	Dr. Kaspar Willam	6/16/2003

OUTSIDE EXPERTS FOR BASELINE STRUCTURAL PERFORMANCE, IMPACT ANALYSIS, STRUCTURAL RESPONSE TO FIRE, COLLAPSE, ETC.

Under solicitation number SB1341-03-Q-0322, firm fixed-price purchase orders have been awarded to experts in five technical areas for their experience and judgment at the most senior professional level to provide expert technical assistance as follows:

Area 3: Thermal-Structural Analysis of Structural Systems Exposed to Fire

A purchase order for Area 3 has been awarded to Prof. Kaspar Willam, a Professor of Civil Engineering at the University of Colorado at Boulder, Colorado. Dr. Willam will provide technical expertise and assistance for analysis of the structural response of the impact-damaged WTC 1 and 2, and of WTC 7, to uncontrolled fires. The analyses will include separate evaluations of components and subsystems (exterior and interior columns, floor truss members, floor system) and of the global structural system response. The specific tasks Dr. Willam will perform include:

- Provide expert technical assistance in finite element and analytical modeling for thermal-structural analysis of structural systems, characterization and constitutive relations of materials at elevated temperature, and thermal analysis and thermal-structural response of structural systems.
- Conduct in-depth, review and critique of the work done on the thermal-structural response of the WTC towers to fire. The review shall include: a) appropriateness of the models for their intended uses, including modeling assumptions, level of detail, model geometry and material properties, and verification and validation procedures; and b) appropriateness of the analyses and accuracy of results.

Dr. Willam has a doctorate in civil engineering and is a recognized expert with over 33 years of experience in the fields of finite element analysis, constitutive modeling, inelastic behavior, thermo-mechanical behavior of materials and structures, and computing in applied mechanics. He has published numerous papers in each of these fields. He is a Fellow of the American Society of Civil Engineers (ASCE), a Fellow of the American Society of Mechanical Engineers (ASME), and a Fellow of the US Association of Computational Mechanics (USACM). He received the Newmark medal of the American Society of Civil Engineers in 2003 for his outstanding contributions in structural engineering and mechanics. He will be providing technical assistance and expertise in the following areas.

- Temperature-dependent thermal and mechanical materials characterization and constitutive modeling.
- Analytical modeling and transient thermal and thermal-mechanical finite element analysis.
- Analytical modeling and nonlinear finite element analysis of structural systems subjected to degradation of mechanical properties at elevated temperatures.



NIST NCSTAR 1

Federal Building and Fire Safety Investigation
of the World Trade Center Disaster

Final Report on the **Collapse of the World Trade Center Towers**

NIST

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3. The heating and consequent weakening of the structural elements by the fires.
4. The response of the damaged and heated building structure, and the progression of structural component failures leading to the initiation of the collapse of the towers.

For such complex structures and complex thermal and structural processes, each of these steps stretched the state of the technology and tested the limits of software tools and computer hardware. For example, the investigators advanced the state-of-the-art in the measurement of construction material properties and in structural finite element modeling. New modeling capability was developed for the mapping of fire-generated environmental temperatures onto the building structural components.

The output of the four-step simulations was subject to uncertainties in the as-built condition of the towers, the interior layout and furnishings, the aircraft impact, the internal damage to the towers (especially the thermal insulation for fire protection of the structural steel, which is colloquially referred to as *fireproofing*), the redistribution of the combustibles, and the response of the building structural components to the heat from the fires. To increase confidence in the simulation results, NIST used the visual evidence, eyewitness accounts from inside and outside the buildings, laboratory tests involving large fires and the heating of structural components, and formal statistical methods to identify influential parameters and quantify the variability in analysis results.

- Combination of the knowledge gained into probable collapse sequences for each tower,² the identification of factors that contributed to the collapse, and a list of factors that could have improved building performance or otherwise mitigated the loss of life.
- Compilation of a list of findings that respond to the first three objectives and a list of recommendations that responds to the fourth objective.

E.3 SUMMARY OF FINDINGS

Objective 1: Determine why and how WTC 1 and WTC 2 collapsed following the initial impacts of the aircraft.

- The two aircraft hit the towers at high speed and did considerable damage to principal structural components (core columns, floors, and perimeter columns) that were directly impacted by the aircraft or associated debris. However, the towers withstood the impacts and would have remained standing were it not for the dislodged insulation (fireproofing) and the subsequent multi-floor fires. The robustness of the perimeter frame-tube system and the large size of the buildings helped the towers withstand the impact. The structural system redistributed loads from places of aircraft impact, avoiding larger scale damage upon impact. The hat truss, a feature atop each tower which was intended to support a television antenna, prevented earlier collapse of the building core. In each tower, a different combination of impact damage and heat-weakened structural components contributed to the abrupt structural collapse.

² The focus of the Investigation was on the sequence of events from the instant of aircraft impact to the initiation of collapse for each tower. For brevity in this report, this sequence is referred to as the “probable collapse sequence,” although it includes little analysis of the structural behavior of the tower after the conditions for collapse initiation were reached and collapse became inevitable.

NIST NCSTAR 1-6

**Federal Building and Fire Safety Investigation of the
World Trade Center Disaster**

Structural Fire Response and Probable Collapse Sequence of the World Trade Center Towers

John L. Gross
Therese P. McAllister

min long) for WTC 2 . Insulated floors thermally expanded, pushed outward on the exterior columns, and sagged in the full floor analyses, but the floor sag was insufficient to exert an inward pull on the exterior columns.

Steel members with dislodged insulation were found to have temperatures greater than 600 °C and often higher than 800 °C within 10 min to 15 min after exposure to a nearby fire. Fire exposures considerably longer than the 60 to 100 min exposure in WTC 2 and WTC 1, respectively, were required for insulated members to reach these temperatures. Reductions in modulus of elasticity, yield strength, and ultimate tensile strength of steel in the WTC towers were predicted to be 13 percent, 20 percent, and 10 percent, respectively, at 400 °C, and 35 percent, 92 percent, and 80 percent, respectively, at 700 °C. Steel loses its strength significantly at 700 °C. At these temperatures, the long-span floors were found to sag sufficiently to exert an inward pull on the exterior walls, primarily due to buckling of truss web diagonal members. In addition, creep in steel columns becomes significant when the steel temperatures are greater than 500 °C and subject to high stresses for a period of time.

Inward bowing of an exterior wall was a necessary but not sufficient condition to initiate collapse. In both WTC 1 and WTC 2, significant weakening of the core due to aircraft impact damage and thermal effects was also necessary to initiate building collapse. The tower structures had significant capacity to redistribute loads (a) from bowed walls to adjacent exterior walls with short-span floors via the arch action of spandrels, and (b) between the core and exterior walls via the hat truss and, to a lesser extent, the floors. Without the impact damage, the towers' capacity to redistribute loads would have been even greater.

As shown in the analysis results, the temperatures in steel components without insulation damage were lower for the same fire. Lower temperatures resulted in reduced creep, plasticity, and buckling. Without insulation damage, floor sagging was insufficient to exert pull-in forces on the exterior wall; the core columns maintained their stiffness and strength; and the exterior wall did not bow inward. The lack of thermally induced damage would result in negligible load redistributions, and the towers would have remained stable.

9.4.3 Time to collapse

The difference in the time it took for each WTC tower to collapse was due primarily to the differences in structural damage, the time it took the fires to travel from the impact area across the floors and core to critical locations, and the time it took to weaken the core and exterior columns. WTC 2 had asymmetric structural damage to the core, including the severing of a corner core column, and WTC 1 had more symmetrical damage. The fires in WTC 2 reached the east side of the building more quickly, within 10 to 20 minutes, than the 50 to 60 minutes it took the fires in WTC 1 to reach the south side.

9.4.4 Comparison with Other Collapse Hypotheses

Alternate analyses and collapse hypotheses were performed and reported by other studies. A comparison of NIST and other hypotheses is presented to review assumptions, methodologies, and results. The comparison includes analyses performed by

- Northwestern University,

- Weidlinger Associates, Inc. with Hughes Associates and ArupFire,
- University of Maryland at College Park and the Israel Institute of Technology,
- Edinburgh University, and
- Arup.

The NIST structural response analyses included the effects of aircraft impact damage to the structure and thermal insulation, fire growth and spread, the resulting time-varying temperatures of the structural components, and the progression of local structural failure leading up to collapse initiation. The analyses included the effects of construction sequence, thermal expansion, plastic and creep strains, temperature-dependent material properties, and relevant failure modes for structural members and connections.

With the exception of the Weidlinger-led study, the analyses for the other collapse hypotheses presented here ignored impact damage, assumed time-temperature curves for structural subsystems (i.e. floor trusses and exterior columns), and conducted analyses of components or subsystems but did not conduct global analyses of the entire structure (i.e., core, floors, exterior walls, and hat truss) that considered all of the load redistribution paths as local members and subsystems were thermally weakened over time. The Weidlinger study included impact damage and assumed time-temperature curves for structural subsystems for their global analyses of each tower.

Northwestern University

The study performed by Northwestern University (Bazant 2002) was a simplified approximate analysis of the overall collapse of the WTC towers which addressed the question of why a total collapse occurred. The analysis addressed the results of prolonged heating which would have caused the columns of a single floor to lose their load carrying capacity and initiated the collapse of the building. The analysis assumed loss of thermal insulation during impact, uniform temperatures of 800 °C for a uniform column size and load across a single floor, and creep buckling and loss of load carrying capacity in over half of the columns. The analysis included evaluation of the dynamic amplification of the loads and the ability of the columns in the lower floors to dissipate the kinetic energy of the falling upper building mass through formation of plastic hinge mechanisms. The analysis found that the ratio of the kinetic energy of the upper building section dropping one floor to the deformation energy of plastic hinge rotation in the lower building columns was approximately a factor of eight.

The study by Northwestern did not address the details of impact damage, fire dynamics, or structural response of the towers. Rather, a generalized condition was assumed of heated columns, and the question of why there was total collapse was addressed. NIST agrees with the assessment of the tower's required structural capacity to absorb the released energy of the upper building section as it began to fall as an approximate lower bound. The likelihood of the falling building section aligning vertically with the columns below was small, given the observed tilting, so that the required capacity would be greater if interaction with the floors was also considered, as pointed out in the study.

Exhibit J
To Ethics Complaint
Amendment

Presenter of case: Richard Johns

COPE member involved: *Journal of Engineering Mechanics*; ASCE

Date at which case was received: 24 July 2020

Summary of issue, as outlined by presenter

I am submitting this concern regarding a discussion paper of mine (co-authored with Anthony Szamboti). The discussion paper was criticizing a paper already published in the JEM, and we believe that we identified straightforward and fatal errors in the original paper. Nevertheless, our discussion paper was finally rejected as “out of scope” for the journal. Our discussion paper did initially receive a technical review and was declined on the basis of that review on May 31, 2012, exactly one year after it was submitted. However, this review did not find any substantive error in our manuscript, so we appealed the decision and submitted a revised manuscript that we thought would clarify our position and avoid misunderstandings. However, rather than completing a technical review of the revised manuscript, as initially promised and acted upon, the JEM later rejected the revised manuscript as “out of scope.” (This occurred in August 2013, i.e., 14 months after the revised manuscript was submitted, and more than two years after the first version was submitted. It is also of note that the JEM published another author’s discussion of the original paper — submitted on the same day as ours — in October 2012.)

In September 2013, one month after our discussion paper was finally rejected as “out of scope,” the ASCE’s Engineering Mechanics Institute (EMI) Board of Governors, which oversees the JEM, reviewed the matter and determined that we “were treated fairly and all ASCE Publication processes were properly followed.” However, post-review communications from EMI President Roger Ghanem and ASCE Journals Director Angela Cochran indicate that the EMI Board of Governors reviewed and decided the matter as if our revised discussion paper had been rejected on technical grounds, based on the initial peer review, rather than being rejected as “out of scope,” which was the basis given for the final rejection. There was also no justification given for the claim that we were treated fairly, especially considering the fact that another author’s discussion paper, of the same original paper, was found within the JEM’s scope. Also, one of the two editors who rejected the discussion paper as “out of scope” was the treasurer and president-elect of the EMI Board of Governors at the time, which calls into question the impartiality of the other members of the EMI Board of Governors. (The fact that the editor went on to serve as the president of the EMI Board of Governors, at the same time that he was serving as the chief editor of the JEM, is also a cause for concern.) We were not given the opportunity to participate in the EMI Board of Governors’ review, which would have allowed us to make the case that the “out of scope” rejection was inappropriate for a duly submitted discussion paper. This probably contributed to the EMI Board of Governors incorrectly reviewing the case as if the discussion paper had been ultimately rejected on technical grounds.

We (the authors of the discussion paper) along with 10 ASCE members submitted an ethics complaint against the two editors to the ASCE’s Committee on Professional Conduct (CPC) in September 2018 (one of the two editors is still the JEM’s chief editor). Our goal in doing so has been to use the ASCE ethics process as a vehicle for reaching the proposed resolution of having the JEM review the revised

manuscript and publish it if no fatal errors are found. We do not seek disciplinary action against the editors.

About one year after the complaint was submitted, on October 2, 2019, Tara Hoke, a staff member for the CPC, wrote to me and the other complainants: “Ultimately, the CPC feels that the concerns you raised are not an ‘ethics’ issue. They felt that editors should have broad discretion to determine the scope of their journals, and they were not supportive of providing ethical scrutiny for an editor’s decision to accept or reject content in the absence of a strong indication of fraud, conflict of interest, or similar malfeasance—which they did not see in this case.”

In response, on October 29, 2019, we submitted a supplement disputing the notion that the editorial discretion granted to ASCE editors should be so broad that they are allowed to reject duly submitted discussion papers as “out of scope,” and that presents new information regarding the editors’ serious conflicts of interest.

Finally, in July 2020, Tara Hoke informed me and one of the ASCE member complainants via telephone that the CPC believes conflicts of interest did not play a role in the editors’ decision, and that the CPC will recommend to the ASCE Executive Committee against finding that the editors violated the ASCE Code of Ethics.

In response to this development, we (the authors and complainants) proposed submitting the case to COPE’s Subcommittee on Facilitation and Integrity in hopes of obtaining guidance and advice for how ASCE should handle the case. Now that the CPC has completed its review of the case, the case is set to be heard by the ASCE’s Executive Committee in a formal disciplinary hearing, which is mandatory because the complaint was supported by 10 ASCE members. However, we have always viewed the Executive Committee’s disciplinary hearing as a last resort. We still wish to seek a resolution through the CPC, whose official mandate is to “exercise every means possible to resolve . . . charges of professional misconduct through measures other than reference to the Executive Committee.” Tara Hoke has advised that ASCE has agreed for the case to be referred to COPE, and that ASCE would welcome COPE’s guidance and advice before deciding the matter.

What aspects of the Core Practices do you believe that the member is contravening, and why?

We believe that the following five core practices have been contravened in some manner: Post-publication discussion and corrections; Conflicts of interest / Competing interests; Complaints and appeals; Allegations of misconduct; Peer review processes.

With regard to post-publication discussion and corrections, we believe the editors violated the core practice by not allowing for debate post publication. We believe it is highly inappropriate for a duly submitted discussion paper to be considered “out of scope” — especially one that claims to identify straightforward and fatal errors in a published paper. Based on the ethical obligations of editors outlined in “Publishing in ASCE Journals,” the editors should actually have had a heightened interest in evaluating the validity of the claims made in our discussion paper and taking due action if the original paper was found to be erroneous.

With regard to conflicts of interest, we believe that editor Roberto Ballarini should have recused himself because of his relationship with one of the original paper's authors (Ballarini was a supervisor/co-worker of Jia-Liang Le at the University of Minnesota, and the two of them co-authored a number of papers that were published around that time). The other conflicts of interest stated in the October 2019 ethics complaint supplement perhaps do not rise to the level of requiring recusal. However, in hindsight, they should be viewed as having possibly motivated the actions of the editors. Furthermore, we feel that the EMI Board of Governors' review of the case did not safeguard against conflicts of interest between the members of the board and the editors — one of whom, as mentioned above, was the board's treasurer and had just been elected by the board to be the next EMI president.

With regard to complaints and appeals as well as allegations of misconduct, we believe the JEM and ASCE do not have a clearly described process for handling complaints against the journal, its staff, or its editorial board, nor for handling allegations of misconduct, at least at the journal/EMI level. "Publishing in ASCE Journals" provides only the following, which does not actually describe the process at all:

"ASCE will keep confidential the names and affiliations of individuals who report possible misconduct related to the authors, editors, and reviewers associated with ASCE journals. Individuals wishing to make a report should contact the ASCE managing editor at journal-services@asce.org. Accusations must be specific in order to allow for ample investigation."

We believe this lack of a clearly described process for complaints and appeals contributed to the lack of transparency and due process we experienced during the EMI Board of Governors review.

We also believe our allegations of misconduct, on the whole, have not been taken seriously by both the EMI Board of Governors and the CPC. We expected a much more thorough investigation of the matter by both bodies. As noted above, we were not given the opportunity to make our case directly to the EMI Board of Governors, and we were never told what information was presented to them. Similarly, we have not been contacted by any member of the CPC since submitting the complaint in September 2018. Our impression is that the CPC has conducted few interviews with the ASCE personnel involved in the handling of our discussion. We also surmise that the investigative questions we posed in our October 2019 supplement have not been answered.

With regard to the peer review process, we feel the peer review of our discussion paper was not well-managed from beginning to end. It took 365 days to receive a decision on our paper, while the author of the other discussion paper received a decision within 70 days. Although the reviewer of our discussion paper did not identify substantive errors in it, our paper was nevertheless rejected. After submitting our appeal and revised manuscript, we were informed that the review would be handled quickly. Instead, we waited over a year to receive a final decision, contacting the JEM and ASCE journal staff several times. Of particular note, we were informed in October 2012 that a peer review of the revised manuscript was underway, but that peer review either was never completed or the results of it were never reported to us.

Member's response

Thank you for reaching out to ASCE and Dr. Ballarini about this situation. Please find our responses to your specific queries below:

- *A summary and timeline of the steps taken to handle Dr Johns' submissions.*
- An article entitled "Why the Observed Motion History of World Trade Center Towers Is Smooth" by Jia-Liang Le and Zdenek P. Bazant was published in the *Journal of Engineering Mechanics* January 2011 issue (Volume 137, Issue 1). Dr. Ross Corotis was the Chief Editor for *JEM* at the time of this paper's acceptance and rendered the final decision in September 2010.
- Subsequent to this publication, Dr. Szamboti and Dr. Johns submitted a discussion related to the paper author by Le and Bazant. This discussion was submitted to the Journal on May 31, 2011. At that time, the Chief Editor for *JEM* was Dr. Kaspar Willam. Dr. Willam assigned the discussion to an Associate Editor for handling on June 19, 2011.
- The AE selected Reviewer 1, who accepted the assignment on August 2, 2011. Reviewer 1 never completed the agreed review and was therefore canceled.
- Reviewer 2 was assigned on May 15, 2012 and submitted a technical review on May 29, 2012. Szamboti and Johns received the decision (declined for technical reasons) on May 31, 2012. With the decline decision, the authors received extensive comments.
- Subsequent to this decision, Szamboti and Johns submitted an appeal on June 8, 2012. The journal editorial office sent a request to separate the pieces of the submission—cover letter, discussion, and rebuttal—to adhere with formatting requirements.
- The appeal was assigned to Dr. Willam as Chief Editor on June 25, 2012. Dr. Willam and Dr. Ballarini were acting as Co-Editors for *JEM* during this time, owing in part to the delays in manuscript processing that were occurring during late 2011/early 2012 (these delays unfortunately affected the initial review of the discussion submitted by Szamboti and Johns, as described in the bullets above). In this unusual Co-Editor arrangement, Dr. Willam was handling ongoing reviews and Dr. Ballarini was to take on new submissions.
- Dr. Willam mistakenly assigned the appeal to Dr. Ballarini in August 2012, misidentifying it as a new submission. Dr. Ballarini assigned the appeal to an AE in September 2012.
- In January 2013, the journal editorial office was informed that the handling editor (AE) would not be handling the appeal. The AE assignment was rescinded when Dr. Ballarini discovered that this was related to a prior decision and therefore should remain with Dr. Willam per the terms of the Co-Editor arrangement.
- In February 2013, the journal editorial office requested that Dr. Willam make an expedient decision, as we were receiving regular requests from the authors for an update. Dr. Willam rendered a decision on the appeal in August 2013. The letter advised the authors that there had been a review and the Co-Editors were standing by the technical comments of the original reviewer and the original decision. The decision letter was written as a courtesy under the authority of both Co-Editors, although the initial decision pre-dated the Co-Editor arrangement and was rendered by Dr. Willam.

- Subsequent to the decline of the appeal, Szamboti and Johns appealed the decision to the Engineering Mechanics Institute of ASCE. In September 2013, EMI informed the authors that their appeal to the Institute was declined. The letter from EMI explained that they were aware that there had been unintentional delays in the review of the discussion (specifically, between the assignment to/termination of Reviewer 1 and the assignment to Reviewer 2), but that the Institute stood by the technical review and original decision.
- *Clarification on the context to consider the submission out of scope if it was originally sent for review, and given that it is a response to a publication in scope for the journal.*
- The decline decision letter stated that the Co-Editors conducted a careful review of the original discussion, the review that recommended the discussion be declined, and the authors' rebuttal to the review. Following such review, the Editors stood by the initial decision and stated that *JEM* is not a forensics journal and therefore is not an appropriate forum for ongoing forensic debate associated with a specific case study (in this case, the collapse of the World Trade Center towers).
- Further, since Dr. Ballarini became Chief Editor for *JEM*, his decision has been not to send out for review future papers dealing with the World Trade Center collapse, in keeping with his position that *JEM* is not an appropriate forum for back-and-forth forensic debate. This policy has been consistently upheld during Dr. Ballarini's tenure as Chief Editor.
- *Information on any steps taken by the journal and publisher to look into the concerns about a potential competing interest on the part of the editor.*
- As described above, the decision on the original paper by Le and Bazant was made by Dr. Corotis, who is no longer Editor of *JEM*. The initial decline decision on the discussion by Szamboti and Johns was rendered by Dr. Willam, who is no longer Editor of *JEM*. Dr. Ballarini's involvement in this matter extends only so far as having assigned Szamboti and Johns' appeal to an AE, although the final decision was rendered by Dr. Willam on behalf of the Co-Editors.
- Dr. Ballarini has disclosed to the journal editorial office/publisher that Dr. Bazant was on the faculty at Northwestern University when he was a graduate student there. Dr. Ballarini did not take a course with him nor author any papers with him. Their collaboration is simply as colleagues in the general area of structures/mechanics.
- Further, Dr. Ballarini has disclosed that he and Dr. Le were colleagues at the University of Minnesota, and have published papers together.
- Relationships as described above are quite common within an academic community, particularly within a relatively niche community such as the one that *JEM* serves. ASCE's expectation of its Editors is that they will give unbiased consideration to all manuscripts despite any such relationships, as described in the final section below. Further, Dr. Ballarini did not participate in any review or decisions related to the paper by Le and Bazant.

- *Information on the policies and processes in place at the journal to handle responses or critiques to published articles.*
- These policies are detailed in “*Publishing in ASCE Journals: A Guide for Authors*”
 - Details about Discussions and Closures, which present and respond to significant comments or questions about the technical content of a technical paper, technical note, or case study published in an ASCE journal are covered in Chapter 1: <https://ascelibrary.org/doi/10.1061/9780784479018.ch01>
 - Policies related to the appeal of review decisions are covered in Chapter 4: <https://ascelibrary.org/doi/10.1061/9780784479018.ch04>

- *Information on the policies and processes in place at the journal to handle concerns about potential competing interests by editors.*
- Obligations of ASCE Editors are detailed in “*Publishing in ASCE Journals: A Guide for Authors*”
 - In particular, the author guide states that “An editor shall give unbiased consideration to all manuscripts offered for publication and shall judge each on its merits **without regard to any personal relationship or familiarity with the author(s)...**”
- Further to this, Dr. Ballarini has chosen to structure his Editorial Board such that he does not handle submissions beyond initial screening. After the initial screening, for papers that Dr. Ballarini deems worth of review, he immediately assigns the submission to an AE, who then sends the paper to reviewers, receives the reviews, and makes a decision. Dr. Ballarini gets involved with papers that involve issues such as plagiarism, fragmentation of research, and so forth. Such a structure further mitigates any conflict Dr. Ballarini may have given the breadth of colleagues with whom he works around the world.

Please let me know if you have any follow-up questions or concerns and I will try to address them for you.

Member’s response following COPE’s request for clarification regarding processes for handling competing interests

Thank you for your follow up questions. Please find our responses below:

1. We understand that as part of the items raised by Dr Johns, concerns were noted about potential competing interests on the part of the editors involved in the handling of his submission and appeal. We would be grateful if you could provide an outline of any potential competing interests for all editors involved in the handling of Dr Johns’ submissions and appeal.

Potential competing interests for Dr. Willam and Dr. Ballarini are listed below. I do not have competing interest information for Dr. Corotis, who rendered the final decision on the Le/Bazant paper. Please note

that the Szamboti/Johns appeal was additionally reviewed and voted on by the eight-member Board of Governors for the Engineering Mechanics Institute (EMI), which is a technical division of ASCE charged with oversight of the Journal of Engineering Mechanics. The list below includes any potential interests between 2005 (5 years prior to submission of the Le/Bazant paper) and 2014 (following decline of Szamboti/Johns appeal):

Dr. Willam:

- No competing interests during this timeframe.
- Dr. Willam was awarded a contract in June 2003 (7 years prior to the submission of the Le/Bazant paper on which Dr. Corotis rendered a final decision and 8 years prior to the submission of the Szamboti/Johns Discussion) to provide technical expertise for the NIST Final Report on the Collapse of the World Trade Center Towers.

Dr. Ballarini:

- Professional affiliations:
 - Dr. Ballarini was a graduate student at Northwestern University from 1980-1985. During this time, Dr. Bazant was a professor at Northwestern. Ballarini did not take any courses with Bazant, nor publish any papers with him, nor work on a funded research project. Since 1985, they have a collegial professional relationship in which they speak to each other at conferences and workshops in the area of mechanics and structures.
 - Dr. Ballarini and Dr. Le were colleagues in the same department at the University of Minnesota from September 2010 through July 2014. During the timeframe that includes a few years before the submission of the manuscript in question until June 2013 (as detailed below), they did not co-author any papers nor have any mutual funding. However, starting in 2013 (as detailed below), they did initiate a collaboration that continues through today, and which lead to the co-publications listed below. Dr. Le was nominated the EMI Board of Governors to become an Associate Editor (AE) for JEM in 2016. The Board of Governors unanimously approved his nomination based on his expertise in concrete materials and structures, and he was appointed to an AE role in 2016.
- Co-publications:
 - Mello, Ballarini, Le, (2020) "Numerical Modeling of Delayed Progressive Collapse of Reinforced Concrete Structures," *ASCE Journal of Engineering Mechanics*, ASCE, 146(10): 04020113.
 - Xu, Ballarini, Le (2019) "A Renewal Weakest-Link Model of Strength Distribution of Polycrystalline Silicon MEMS Structures," *Journal of Applied Mechanics of the ASME*, 86(8): 081005.
 - Le, Ballarini, Zhu (2015) "Modeling of Probabilistic Failure of Polycrystalline Silicon MEMS Structures," *Journal of the American Ceramic Society*, 98(6), 1685-1697.

- Le, Pieuchot, Ballarini (2014) “Effect of stress singularity magnitude on scaling of strength of quasibrittle structures”, *Journal of Engineering Mechanics*, ASCE, 140(5): 04014011.
- Le, Pieuchot, Ballarini (2013) “Effect of stress singularities on scaling of quasibrittle fracture.” *Proceedings of the 13th International Conference of Fracture*, Beijing, China, June 2013.
- Conference presentation:
 - Le and Ballarini (2013) “A finite weakest link model of failure statistics of polycrystalline silicon MEMS devices.” *Proceedings of ASME International Mechanical Engineering Congress and Exposition*, San Diego, CA, November 2013.
- Mutual funding: National Science Foundation, (2014-2017) This was joint research on reliability of microelectromechanical systems made of silicon.

2. Can you please clarify whether the journal has a process to recuse editors who have competing interests with submissions from the handling of those manuscripts, and if that process is not in place, confirm what steps the journal will take to implement such a process?

Yes. For all ASCE Journals, Editors are asked to contact the editorial office when they have competing interests with any authors on incoming submissions. In those situations, the editorial staff blinds the Editor from the submission in the peer review system. The Editor must provide direction as to which AE should handle the submission in his or her stead. The editorial staff adds a note to the submission with the recusal and the handling Editor’s name in the peer review system, and assigns the submission appropriately. The AE renders a final decision on the paper with no involvement from the Chief Editor.

If a Discussion is subsequently submitted in response to such a paper, the editorial staff would link the Discussion to the original paper, and refer to the note in the system regarding the Chief Editor’s recusal from the original submission. The Discussion would therefore also not be handled by the Chief Editor.

Specific to JEM, as described in the previous reply, since becoming Editor, Dr. Ballarini has chosen to structure his Editorial Board such that he does not handle submissions beyond initial screening. In the initial screening, Dr. Ballarini assesses papers to determine, based on the topic, which AEs have the expertise and associated reviewer base. After the initial screening, for papers that Dr. Ballarini deems worth of review, he immediately assigns the submission to one of these AEs, who then sends the paper to reviewers. The AEs receive the reviews and make the final decision. Dr. Ballarini gets involved only with papers that involve issues such as plagiarism, fragmentation of research, and so forth. Very rarely—only when AEs in the topic area are handling too many papers—Dr. Ballarini may send a paper out to reviewers himself. Such a structure further mitigates any conflict, real or perceived, that Dr. Ballarini may have given the breadth of colleagues with whom he works around the world. This process has also reduced time to first decision for JEM to three months.

Please let me know if you have any remaining questions.

Member's response following request from COPE for journal to address steps where Chief editor is involved as part of their processes for competing interests

Please see our responses below in green. I look forward to hearing further.

- You indicate that the journal has a process where editors who have potential competing interests are blinded from the review process. It is however unclear how any potential competing interests on the part of the Chief Editor are managed, as you indicate the Chief Editor would still be involved in the initial screening of submissions and the assignment to an editor. Could you please provide further clarification on how situations where the Chief Editor has a potential competing interest are handled?

I may be misunderstanding your question. The Chief Editor is **NOT** involved in initial screening of submissions for which s/he has a competing interest. We do rely on our Chief Editors to alert us to a competing interest, which they regularly and reliably do. When a Chief Editor alerts us of a competing interest, the editorial staff immediately blinds the Chief Editor to the submission. The Chief Editor does let the staff know which Associate Editor has the most appropriate expertise to handle the submission in his/her stead. As our editorial staff members do not have engineering backgrounds, they cannot make a determination as to who should act as handling Editor in the Chief Editor's place. The submission is assigned to that AE by the editorial staff, and the AE then handles the initial screening and all tasks moving forward that the Chief Editor would ordinarily handle, including rendering a decision. To make sure we are abundantly clear on this point: When a Chief Editor does **NOT** have a competing interest, his/her initial screening includes a review of the content and a decision to move the submission forward for review, and if so to which AE, or to render a quick reject without review. When a Chief Editor **DOES** have a competing interest, his/her initial screening serves **ONLY** to identify a suitable AE.

- In the case of Dr Johns' submission, it appears that a perceived competing interest may arise in relation to the Chief Editor's prior relationship with one of the authors of the publication that Dr Johns' submission is critiquing. As noted in earlier correspondence, the expectation per COPE guidelines would have been for Dr Ballarini to be recused from the editorial evaluation and decision for the manuscript. Could you please comment on this, and clarify what steps the journal took, or will take, to address this concern?

Again, per our earlier replies, Dr. Ballarini was not involved in handing the discussion, nor rendering a final decision. Dr. Willam was the handling Editor for the discussion as described below. The review, in retrospect, should have been written in clearer language that made clear which co-Editor took responsibility for the decision. To address this concern, ASCE now strongly discourages any co-Editor arrangements and, in the case where this is unavoidable, we require one Editor to take ultimate responsibility for rendering each of his/her final decisions (i.e., no "cosigning" of reviews as a formality). In the case of the Szamboti/Johns discussion, Dr. Ballarini became involved when the authors communicated directly with him to inquire about the status. As described in our earlier replies, the

Journal was experiencing significant delays at the time, which eventually resulted in a new Editor appointment. Dr. Ballarini indicated to the authors at the time that he would urge Dr. Willam to expedite a decision, understanding that the tardiness in handling was unacceptable and not fair to the authors. This was the extent of Dr. Ballarini's involvement.

In consideration of the items above, we would also recommend that the journal reviews and updates its editorial policies around competing interests, to provide further clarity on what situations are deemed as constituting a competing interest (real or perceived) and that you consider incorporating a time element to the policies to clarify what timeframe applies when considering situations falling within the competing interests policy. Thank you for your suggestion. Upon resolution of this issue, and when we next update our Author Instructions, we will review our editorial policies re: competing interests.

COPE's review

A member of the Facilitation & Integrity subcommittee reviewed the case. Upon review of the information the presenter submitted the case was deemed to fall within the scope of the Facilitation & Integrity process.

COPE approached the *Journal of Engineering Mechanics* for comments on the concerns raised by the presenter. The journal provided a detailed timeline of the handling of the submissions and clarified that the rejection of the resubmission was handled by Dr Willam as Chief Editor and not by Dr Ballarini, the journal also provided information on the competing interests policies at the journal.

The Facilitation & Integrity subcommittee followed up with the journal to request further clarification regarding competing interests in the history of the manuscript and the processes in place at the journal to manage any potential competing interests that arise. The journal provided the potential competing interests information as well as details on the processes in place at the journal to address competing interests if/when they arise.

The subcommittee followed up with the journal to indicate the processes for competing interests should also address potential competing interests by the Chief Editor and their role in the initial screening of submissions and recommended that the journal reviews and updates its editorial policies around competing interests, to provide further clarity on what situations are deemed as constituting a competing interest as part of the information provided on the journal's website. The journal replied indicating that if they had a competing interest, the Chief Editor was only involved in assignment to an editor and confirmed the journal would be reviewing and updating its public information on competing interests.

The Facilitation & Integrity subcommittee advised that if a competing interest is identified regarding the Chief Editor, this editor should be recused from all steps in the editorial process for the manuscript, and recommended that the journal updates its process to ensure that in those situations the Chief Editor is not involved in the identification of the editor who would handle the manuscript. Following recommendations from COPE on how to address this process change, the journal confirmed they would implement the change to their process.

Conclusions

Upon consideration of the concerns and the member's response, the Facilitation & Integrity subcommittee considers that **the journal followed an adequate process to handle the concerns raised about the handling of the submission. The journal undertook a review of the submission history and of potential competing interests on the part of the editors, and confirmed that the Chief Editor with potential competing interests did not handle the decision for rejection.**

With regard to the processes in place for competing interests, upon COPE's request for further steps to manage potential competing interests by the Chief Editor, the journal agreed to make changes to its processes to address this, and also confirmed it would review its policies around competing interests.

The Facilitation & Integrity subcommittee views the decision on whether to publish Dr Johns' manuscript within the remit of editorial decision making, which falls beyond what COPE can review as part of the COPE Facilitation & Integrity process.

In this case, the Facilitation & Integrity subcommittee considers that the journal followed an adequate process. However, we put forward two recommendations for the journal, as outlined above:

- Complete the update to the journal processes to recuse the Chief Editor from the initial screening and editor assignment if there is a competing interest on the part of the Chief Editor.
- Complete the review and update to the journal's competing interests policies to ensure the situations that fall within the framework for competing interests and how the journal would manage those is clear to readers on the journal's website.

Disclaimer

COPE accepts no liability for any loss or damage caused or occasioned as a result of advice given by them or by any COPE member. Advice given by COPE and its members is not given for the purposes of court proceedings within any jurisdiction and may not be cited or relied upon for this purpose.

Exhibit K
To Ethics Complaint
Amendment



Concerns raised to the attention of COPE

Iratxe Puebla [REDACTED]

13 October 2020 at 00:55

To: [REDACTED]
Cc: Richard Johns [REDACTED]

Dear Dr Ballarini and Ms Compton,

We are writing to you as the Committee on Publication Ethics (COPE) has received a concern from Richard Johns in relation to the handling of a submission he made to the *Journal of Engineering Mechanics*.

COPE's role is primarily to provide advice for member editors and journals and to promote a better understanding of publication ethics. If concerns are raised to COPE's attention, we aim to provide guidance on whether any actions taken are not aligned with the COPE Core Practices or COPE guidelines, and advice in relation to disagreements between the reader/author and the editor. We do not seek to interfere with specific editorial decisions.

With this in mind, we are writing to you regarding Dr Johns' concerns in the hope that we can facilitate a dialogue in relation to the issues raised. In order for the process to be as transparent and constructive as possible, we have copied Dr Johns on this email and request that you do the same in your reply.

Dr Johns has raised concerns about the fact that his submission in response to a publication in the *Journal of Engineering Mechanics* was rejected as out of scope. Dr Johns indicates that he had previously submitted the manuscript which underwent a technical review and was rejected on that basis. Dr Johns notes that he was informed that his resubmission would undergo a technical review but was instead rejected as out of scope. He also indicates that the handling editor had previously collaborated with one of the authors of the article that his paper was responding to, and he feels that this editor should have recused himself from the handling of the submission. Dr Johns feels that his paper should be sent for a further technical review and published if no technical flaws are raised. We include below a summary of the concerns raised by Dr Johns.

We would very much appreciate hearing your comments in relation to Dr Johns' concerns. Could you please comment on how the journal handled the concerns raised about the rejection of his submission? We would be grateful if you could provide information on the following:

- A summary and timeline of the steps taken to handle Dr Johns' submissions.
- Clarification on the context to consider the submission out of scope if it was originally sent for review, and given that it is a response to a publication in scope for the journal.
- Information on any steps taken by the journal and publisher to look into the concerns about a potential competing interest on the part of the editor.
- Information on the policies and processes in place at the journal to handle responses or critiques to published articles.
- Information on the policies and processes in place at the journal to handle concerns about potential competing interests by editors.

We would very much appreciate hearing your comments in relation to Dr Johns' concerns, so that we can ascertain what advice we are able to provide.

As part of the information received about this case, we note that elements of the publisher's follow up involved Tara Hoke, who is General Counsel for ASCE and also the Chair of COPE's Facilitation and Integrity subcommittee. Per our internal process, Tara Hoke will not be involved in the Facilitation and Integrity subcommittee's handling of the case at any point, and we will direct all correspondence about the case to Ms Compton as separate contact at the publisher.

Many thanks for helping us address Dr Johns' concerns. We look forward to hearing from you.

With best wishes,

Iratxe Puebla
Facilitation and Integrity Officer

Committee on Publication Ethics (COPE)

www.publicationethics.org

Registered charity No 1123023

Registered in England and Wales, Company No 6389120

Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

On behalf of

COPE Facilitation and Integrity subcommittee

Summary of concerns raised by Richard Johns

I am submitting this concern regarding a discussion paper of mine (co-authored with Anthony Szamboti). The discussion paper was criticizing a paper already published in the JEM, and we believe that we identified straightforward and fatal errors in the original paper. Nevertheless, our discussion paper was finally rejected as “out of scope” for the journal. Our discussion paper did initially receive a technical review and was declined on the basis of that review on May 31, 2012, exactly one year after it was submitted. However, this review did not find any substantive error in our manuscript, so we appealed the decision and submitted a revised manuscript that we thought would clarify our position and avoid misunderstandings. However, rather than completing a technical review of the revised manuscript, as initially promised and acted upon, the JEM later rejected the revised manuscript as “out of scope.” (This occurred in August 2013, i.e., 14 months after the revised manuscript was submitted, and more than two years after the first version was submitted. It is also of note that the JEM published another author’s discussion of the original paper — submitted on the same day as ours — in October 2012.)

In September 2013, one month after our discussion paper was finally rejected as “out of scope,” the ASCE’s Engineering Mechanics Institute (EMI) Board of Governors, which oversees the JEM, reviewed the matter and determined that we “were treated fairly and all ASCE Publication processes were properly followed.” However, post-review communications from EMI President Roger Ghanem and ASCE Journals Director Angela Cochran indicate that the EMI Board of Governors reviewed and decided the matter as if our revised discussion paper had been rejected on technical grounds, based on the initial peer review, rather than being rejected as “out of scope,” which was the basis given for the final rejection. There was also no justification given for the claim that we were treated fairly, especially considering the fact that another author’s discussion paper, of the same original paper, was found within the JEM’s scope. Also, one of the two editors who rejected the discussion paper as “out of scope” was the treasurer and president-elect of the EMI Board of Governors at the time, which calls into question the impartiality of the other members of the EMI Board of Governors. (The fact that the editor went on to serve as the president of the EMI Board of Governors, at the same time that he was serving as the chief editor of the JEM, is also a cause for concern.) We were not given the opportunity to participate in the EMI Board of Governors’ review, which would have allowed us to make the case that the “out of scope” rejection was inappropriate for a duly submitted discussion paper. This probably contributed to the EMI Board of Governors incorrectly reviewing the case as if the discussion paper had been ultimately rejected on technical grounds.

We (the authors of the discussion paper) along with 10 ASCE members submitted an ethics complaint against the two editors to the ASCE’s Committee on Professional Conduct (CPC) in September 2018 (one of the two editors is still the JEM’s chief editor). Our goal in doing so has been to use the ASCE ethics process as a vehicle for reaching the proposed resolution of having the JEM review the revised manuscript and publish it if no fatal errors are found. We do not seek disciplinary action against the editors.

About one year after the complaint was submitted, on October 2, 2019, Tara Hoke, a staff member for the CPC, wrote to me and the other complainants: “Ultimately, the CPC feels that the concerns you raised are not an ‘ethics’ issue. They felt that editors should have broad discretion to determine the scope of their journals, and they were not supportive of providing ethical scrutiny for an editor’s decision to accept or reject content in the absence of a strong indication of fraud, conflict of interest, or similar malfeasance—which they did not see in this case.”

In response, on October 29, 2019, we submitted a supplement disputing the notion that the editorial discretion granted to ASCE editors should be so broad that they are allowed to reject duly submitted discussion papers as “out of scope,” and that presents new information regarding the editors’ serious conflicts of interest.

Finally, in July 2020, Tara Hoke informed me and one of the ASCE member complainants via telephone that the CPC believes conflicts of interest did not play a role in the editors' decision, and that the CPC will recommend to the ASCE Executive Committee against finding that the editors violated the ASCE Code of Ethics.

In response to this development, we (the authors and complainants) proposed submitting the case to COPE's Subcommittee on Facilitation and Integrity in hopes of obtaining guidance and advice for how ASCE should handle the case. Now that the CPC has completed its review of the case, the case is set to be heard by the ASCE's Executive Committee in a formal disciplinary hearing, which is mandatory because the complaint was supported by 10 ASCE members. However, we have always viewed the Executive Committee's disciplinary hearing as a last resort. We still wish to seek a resolution through the CPC, whose official mandate is to "exercise every means possible to resolve . . . charges of professional misconduct through measures other than reference to the Executive Committee." Tara Hoke has advised that ASCE has agreed for the case to be referred to COPE, and that ASCE would welcome COPE's guidance and advice before deciding the matter.

Exhibit L
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Ballarini, Roberto [REDACTED]

13 October 2020 at 04:48

To: Iratxe Puebla [REDACTED]

Cc: [REDACTED], Richard Johns [REDACTED]

Dear Ms Puebla

Thanks for you email.

I will prepare a reply that summarizes my involvement in this matter. I have done that previously over the past years and will put something together one more time.

Note that as I explained in previous replies related to this issue, I became involved with dr John's' submission at the end of the affair when Dr Willam had made a decision to reject it. He is the one who was involved with its review (he sent it out for review etc), not me. I explained this numerous times. My involvement was limited to the co-signing of the decision letter, which includes our decision that the Journal will not continue being a venue for detailed forensic analyses of the twin towers collapse. In your communication you refer to a conflict of interest between editor and the authors of the paper discussed in Dr John's' submission. Are you referring to me or Dr Willam? I certainly will state in my reply my relation with those authors, but please let me know if it is me who you are referring to as having a conflict of interest.

As for the time frame of the review of this paper, I would need to ask the ASCE journals office for this, as I was not involved with the paper when it arrived through the time Dr Willam handled its review. Can you tell me whether my reply should deal with the time frame, or are you going to receive the time frame from Dr Willam or the Journals office? Ditto for any communications between dr Willam and Dr Johns and/or others.

In addition, am I allowed to communicate with Ms Toke and other staff and possibly other staff at ASCE journals office to gather information that is needed for my reply?

Thanks, Roberto Ballarini

Sent from my iPhone

On Oct 13, 2020, at 2:56 AM, Iratxe Puebla [REDACTED] wrote:

[Quoted text hidden]

Exhibit M
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Compton, Dana [REDACTED]

15 October 2020 at 03:14

To: Iratxe Puebla [REDACTED]

Cc: Richard Johns [REDACTED], "Ballarini, Roberto" [REDACTED]

Dear Ms. Puebla,

Thank you for reaching out to ASCE and Dr. Ballarini about this situation. Please find our responses to your specific queries below:

- A summary and timeline of the steps taken to handle Dr Johns' submissions.
 - An article entitled "Why the Observed Motion History of World Trade Center Towers Is Smooth" by Jia-Liang Le and Zdenek P. Bazant was published in the *Journal of Engineering Mechanics* January 2011 issue (Volume 137, Issue 1). Dr. Ross Corotis was the Chief Editor for *JEM* at the time of this paper's acceptance and rendered the final decision in September 2010.
 - Subsequent to this publication, Dr. Szamboti and Dr. Johns submitted a discussion related to the paper author by Le and Bazant. This discussion was submitted to the Journal on May 31, 2011. At that time, the Chief Editor for *JEM* was Dr. Kaspar Willam. Dr. Willam assigned the discussion to an Associate Editor for handling on June 19, 2011.
 - The AE selected Reviewer 1, who accepted the assignment on August 2, 2011. Reviewer 1 never completed the agreed review and was therefore canceled.
 - Reviewer 2 was assigned on May 15, 2012 and submitted a technical review on May 29, 2012. Szamboti and Johns received the decision (declined for technical reasons) on May 31, 2012. With the decline decision, the authors received extensive comments.
 - Subsequent to this decision, Szamboti and Johns submitted an appeal on June 8, 2012. The journal editorial office sent a request to separate the pieces of the submission—cover letter, discussion, and rebuttal—to adhere with formatting requirements.
 - The appeal was assigned to Dr. Willam as Chief Editor on June 25, 2012. Dr. Willam and Dr. Ballarini were acting as Co-Editors for *JEM* during this time, owing in part to the delays in manuscript processing that were occurring during late 2011/early 2012 (these delays unfortunately affected the initial review of the discussion submitted by Szamboti and Johns, as described in the bullets above). In this unusual Co-Editor arrangement, Dr. Willam was handling ongoing reviews and Dr. Ballarini was to take on new submissions.
 - Dr. Willam mistakenly assigned the appeal to Dr. Ballarini in August 2012, misidentifying it as a new submission. Dr. Ballarini assigned the appeal to an AE in September 2012.
 - In January 2013, the journal editorial office was informed that the handling editor (AE) would not be handling the appeal. The AE assignment was rescinded when Dr. Ballarini discovered that this was related to a prior decision and therefore should remain with Dr. Willam per the terms of the Co-Editor arrangement.
 - In February 2013, the journal editorial office requested that Dr. Willam make an expedient decision, as we were receiving regular requests from the authors for an update. Dr. Willam rendered a decision on the appeal in August 2013. The letter advised the authors that there had been a review and the Co-Editors were standing by the technical comments of the original reviewer and the original decision. The decision letter was written as a courtesy under the authority of both Co-Editors, although the initial decision pre-dated the Co-Editor arrangement and was rendered by Dr. Willam.
 - Subsequent to the decline of the appeal, Szamboti and Johns appealed the decision to the Engineering Mechanics Institute of ASCE. In September 2013, EMI informed the authors that their appeal to the Institute was declined. The letter from EMI explained that they were aware that there had been unintentional delays in the review of the discussion (specifically, between the

assignment to/termination of Reviewer 1 and the assignment to Reviewer 2), but that the Institute stood by the technical review and original decision.

- Clarification on the context to consider the submission out of scope if it was originally sent for review, and given that it is a response to a publication in scope for the journal.
 - The decline decision letter stated that the Co-Editors conducted a careful review of the original discussion, the review that recommended the discussion be declined, and the authors' rebuttal to the review. Following such review, the Editors stood by the initial decision and stated that *JEM* is not a forensics journal and therefore is not an appropriate forum for ongoing forensic debate associated with a specific case study (in this case, the collapse of the World Trade Center towers).
 - Further, since Dr. Ballarini became Chief Editor for *JEM*, his decision has been not to send out for review future papers dealing with the World Trade Center collapse, in keeping with his position that *JEM* is not an appropriate forum for back-and-forth forensic debate. This policy has been consistently upheld during Dr. Ballarini's tenure as Chief Editor.

- Information on any steps taken by the journal and publisher to look into the concerns about a potential competing interest on the part of the editor.
 - As described above, the decision on the original paper by Le and Bazant was made by Dr. Corotis, who is no longer Editor of *JEM*. The initial decline decision on the discussion by Szamboti and Johns was rendered by Dr. Willam, who is no longer Editor of *JEM*. Dr. Ballarini's involvement in this matter extends only so far as having assigned Szamboti and Johns' appeal to an AE, although the final decision was rendered by Dr. Willam on behalf of the Co-Editors.
 - Dr. Ballarini has disclosed to the journal editorial office/publisher that Dr. Bazant was on the faculty at Northwestern University when he was a graduate student there. Dr. Ballarini did not take a course with him nor author any papers with him. Their collaboration is simply as colleagues in the general area of structures/mechanics.
 - Further, Dr. Ballarini has disclosed that he and Dr. Le were colleagues at the University of Minnesota, and have published papers together.
 - Relationships as described above are quite common within an academic community, particularly within a relatively niche community such as the one that *JEM* serves. ASCE's expectation of its Editors is that they will give unbiased consideration to all manuscripts despite any such relationships, as described in the final section below. Further, Dr. Ballarini did not participate in any review or decisions related to the paper by Le and Bazant.

- Information on the policies and processes in place at the journal to handle responses or critiques to published articles.
 - These policies are detailed in "*Publishing in ASCE Journals: A Guide for Authors*"
 - Details about Discussions and Closures, which present and respond to significant comments or questions about the technical content of a technical paper, technical note, or case study published in an ASCE journal are covered in Chapter 1: <https://ascelibrary.org/doi/10.1061/9780784479018.ch01>
 - Policies related to the appeal of review decisions are covered in Chapter 4: <https://ascelibrary.org/doi/10.1061/9780784479018.ch04>

- Information on the policies and processes in place at the journal to handle concerns about potential competing interests by editors.
 - Obligations of ASCE Editors are detailed in "*Publishing in ASCE Journals: A Guide for Authors*"

- In particular, the author guide states that “An editor shall give unbiased consideration to all manuscripts offered for publication and shall judge each on its merits **without regard to any personal relationship or familiarity with the author(s)...**”
- Further to this, Dr. Ballarini has chosen to structure his Editorial Board such that he does not handle submissions beyond initial screening. After the initial screening, for papers that Dr. Ballarini deems worth of review, he immediately assigns the submission to an AE, who then sends the paper to reviewers, receives the reviews, and makes a decision. Dr. Ballarini gets involved with papers that involve issues such as plagiarism, fragmentation of research, and so forth. Such a structure further mitigates any conflict Dr. Ballarini may have given the breadth of colleagues with whom he works around the world.

Please let me know if you have any follow-up questions or concerns and I will try to address them for you.

Best,

Dana

Dana Compton

Managing Director and Publisher

American Society of Civil Engineers

[1801 Alexander Bell Dr., Reston, VA 20191](#)



[Quoted text hidden]

Exhibit N
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Richard Johns [REDACTED]

17 October 2020 at 12:13

To: Iratxe Puebla [REDACTED]

Cc: Roberto Ballarini [REDACTED]
[REDACTED]

Dear Ms Puebla,

I really appreciate the transparency of this process, and the fact that I can see everyone's communications.

I reviewed the timeline provided by Dana Compton, and found that some of the bullet points are inconsistent with the emails Mr Szamboti and I received from persons at the JEM, during the period May to August 2013. I'm not sure exactly how this process works, so I'm wondering how I should let you know about this discrepancy. I think I'll just summarize the main issues in this email, and then you can ask for fuller details if you need them.

1. Ms. Compton wrote:

- Dr. Willam mistakenly assigned the appeal to Dr. Ballarini in August 2012, misidentifying it as a new submission. Dr. Ballarini assigned the appeal to an AE in September 2012.
- In January 2013, the journal editorial office was informed that the handling editor (AE) would not be handling the appeal. The AE assignment was rescinded when Dr. Ballarini discovered that this was related to a prior decision and therefore should remain with Dr. Willam per the terms of the Co-Editor arrangement.

This seems inconsistent with the fact that, when we contacted him in May 2013, Dr. Ballarini wrote:

"your discussion has been handled by Dr. Kaspar Willam; I will speak to him tomorrow about it.", and "I responded this morning that I have not been involved with this paper, and that I plan to discuss it with Prof. Willam tomorrow to learn what is the history of this submission."

In other words, Dr. Ballarini claims that he was not involved with our MS prior to May 2013.

2. Ms Compton wrote:

- In February 2013, the journal editorial office requested that Dr. Willam make an expedient decision, as we were receiving regular requests from the authors for an update. Dr. Willam rendered a decision on the appeal in August 2013.

This is also inconsistent with two emails from Dr. Ballarini to Mr. Szamboti on July 8, 2013, that include the following (see Exhibit J of the ASCE Ethics Complaint submitted in September 2018 for the full emails).

At 9:03 AM:

Mr. Szamboti:

last week I requested and received from the Journal office all papers, discussions and reviews it received and published that were associated with the World Trade Center. These hopefully will provide me with a better perspective on your submission. ...

I will do my best to read through what I have received over the next week or so. Then I will talk one more time to Dr. Willam to hear his opinion before making a decision.

Regards, RB

At 2:46 PM:

Mr. Szamboti:

On August 4 I will travel to Evanston for the ASCE EMI Conference. There will be an Editor/Associate Editor meeting at that conference that will be attended by Dr. Willam and some representatives from the Journals office. I will take this opportunity to meet person to person with Dr. Willam to discuss the appeal to your (declined) discussion, and determine whether the appeal has sufficient merit to overturn the original decision.

Not only does Dr. Ballarini express an intention to review our MS himself, he is also clearly planning to make the final decision on it himself, after consulting with Dr. Willam.

3. Ms. Compton wrote:

- In February 2013, the journal editorial office requested that Dr. Willam make an expedient decision, as we were receiving regular requests from the authors for an update. Dr. Willam rendered a decision on the appeal in August 2013. **The letter advised the authors that there had been a review and the Co-Editors were standing by the technical comments of the original reviewer and the original decision. The decision letter was written as a courtesy under the authority of both Co-Editors, although the initial decision predated the Co-Editor arrangement and was rendered by Dr. Willam.**

We were notified by the editors' decision on August 9, 2013 by an email from Holly Koppel, which stated:

Your appeal of the decision on EMENG-1013 has been declined. This decision has been reached by the Co-Editors in Chief after a careful review of the original discussion, the review that recommended the discussion be declined, and your rebuttal to the review. The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers), but instead it is a journal for fundamental contributions to engineering mechanics. The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.

While this mentions that the decision was reached after reviewing the original technical review of our MS (among other things), it does not say that our MS was finally rejected for technical reasons. Instead, it clearly states that it was rejected "because it is out of scope".

While I think these inconsistencies are worth noting, I also want to make it clear that the disputed issues above are not the central point of our complaint. The main point is not that our MS was handled incorrectly (although it was), but rather that blatant errors in the paper by Le and Bazant remain uncorrected. If our work is wrong, we'll be very happy to be shown where, but rejecting a discussion paper as "out of scope" prevents the scientific process of peer criticism from operating as it should.

Best wishes,

Richard Johns

[Quoted text hidden]

--

Richard Johns
Department of Philosophy
Langara College


Exhibit O
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Iratxe Puebla [REDACTED] 18 October 2020 at 00:56
To: Richard Johns [REDACTED]
Cc: Roberto Ballarini [REDACTED], "Compton, Dana" [REDACTED]

Dear Dr Johns,

Thank you for your email and for these additional comments, I have raised this to the attention of the member of the COPE Facilitation and Integrity subcommittee who is reviewing the case.

With best wishes,

Iratxe

Iratxe Puebla

Facilitation and Integrity Officer

Committee on Publication Ethics (COPE)

www.publicationethics.org

Registered charity No 1123023

Registered in England and Wales, Company No 6389120

Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

[Quoted text hidden]

Exhibit P
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Iratxe Puebla [REDACTED]

20 October 2020 at 00:38

To: "Compton, Dana" [REDACTED]

Cc: Richard Johns [REDACTED], "Ballarini, Roberto" [REDACTED]

Dear Ms Compton,

Thank you for your response to our request for comments on Richard Johns' concerns about the handling of his submission to the *Journal of Engineering Mechanics*.

We appreciate the detailed summary you provided regarding the history of the submission. We have reviewed the information you supplied and we feel there are aspects of the procedural items that need further attention. Could you please provide comments on the items below:

1. We understand that as part of the items raised by Dr Johns, concerns were noted about potential competing interests on the part of the editors involved in the handling of his submission and appeal. We would be grateful if you could provide an outline of any potential competing interests for all editors involved in the handling of Dr Johns' submissions and appeal.

Potential competing interests include: a shared affiliation with the authors of the submission by Dr Johns or the authors of the article the submission critiqued, a collaboration with either group of authors within a few years prior to the publication, shared projects or funding for research. Any other financial or non-financial relationship outlined under the [ICMJE recommendations](#) should also be outlined.

2. You indicated that the publisher has a policy that expects editors to '*give unbiased consideration to all manuscripts offered for publication and shall judge each on its merits without regard to any personal relationship or familiarity with the author(s)...*'. In addition to having policies that outline expectations for an unbiased evaluation of manuscripts, it is important for the journal to have established processes in place to address competing interests on the part of the editors when those arise.

Appropriate competing interest policies are a key element of the COPE Core Practices and apply to all stakeholders in the editorial process, including the editors. The expectation per COPE guidelines on competing interest is that any editors who may be perceived as having a competing interest with a submission are recused from the editorial evaluation and decision for the manuscript. The reason for this is that a disclosure of a potential competing interest on the part of the editor would not be, on its own, a sufficient measure to address a potential perception of bias in the editorial decision.

Can you please clarify whether the journal has a process to recuse editors who have competing interests with submissions from the handling of those manuscripts, and if that process is not in place, confirm what steps the journal will take to implement such a process?

Many thanks again for your attention to this matter. We look forward to hearing from you.

With best wishes,

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
www.publicationethics.org

Registered charity No 1123023
Registered in England and Wales, Company No 6389120
Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

On behalf of

COPE Facilitation and Integrity subcommittee

[Quoted text hidden]

Exhibit Q
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Compton, Dana [REDACTED]

21 October 2020 at 10:46

To: Iratxe Puebla [REDACTED]

Cc: Richard Johns [REDACTED] "Ballarini, Roberto" [REDACTED]

Dear Ms. Puebla,

Thank you for your follow up questions. Please find our responses below:

1. We understand that as part of the items raised by Dr Johns, concerns were noted about potential competing interests on the part of the editors involved in the handling of his submission and appeal. We would be grateful if you could provide an outline of any potential competing interests for all editors involved in the handling of Dr Johns' submissions and appeal.

Potential competing interests for Dr. Willam and Dr. Ballarini are listed below. I do not have competing interest information for Dr. Corotis, who rendered the final decision on the Le/Bazant paper. Please note that the Szamboti/Johns appeal was additionally reviewed and voted on by the eight-member Board of Governors for the Engineering Mechanics Institute (EMI), which is a technical division of ASCE charged with oversight of the Journal of Engineering Mechanics. The list below includes any potential interests between 2005 (5 years prior to submission of the Le/Bazant paper) and 2014 (following decline of Szamboti/Johns appeal):

Dr. Willam:

- No competing interests during this timeframe.
- Dr. Willam was awarded a contract in June 2003 (7 years prior to the submission of the Le/Bazant paper on which Dr. Corotis rendered a final decision and 8 years prior to the submission of the Szamboti/Johns Discussion) to provide technical expertise for the NIST Final Report on the Collapse of the World Trade Center Towers.

Dr. Ballarini:

- Professional affiliations:
 - Dr. Ballarini was a graduate student at Northwestern University from 1980-1985. During this time, Dr. Bazant was a professor at Northwestern. Ballarini did not take any courses with Bazant, nor publish any papers with him, nor work on a funded research project. Since 1985, they have a collegial professional relationship in which they speak to each other at conferences and workshops in the area of mechanics and structures.
 - Dr. Ballarini and Dr. Le were colleagues in the same department at the University of Minnesota from September 2010 through July 2014. During the timeframe that includes a few years before the submission of the manuscript in question until June 2013 (as detailed below), they did not co-author any papers nor have any mutual funding. However, starting in 2013 (as detailed below), they did initiate a collaboration that continues through today, and which lead to the co-publications listed below. Dr. Le was nominated the EMI Board of Governors to become an Associate Editor (AE) for JEM in 2016. The Board of Governors unanimously approved his nomination based on his expertise in concrete materials and structures, and he was appointed to an AE role in 2016.
- Co-publications:
 - Mello, Ballarini, Le, (2020) "Numerical Modeling of Delayed Progressive Collapse of Reinforced Concrete Structures," *ASCE Journal of Engineering Mechanics*, ASCE, 146(10): 04020113.

- Xu, Ballarini, Le (2019) "A Renewal Weakest-Link Model of Strength Distribution of Polycrystalline Silicon MEMS Structures," *Journal of Applied Mechanics of the ASME*, 86(8): 081005.
- Le, Ballarini, Zhu (2015) "Modeling of Probabilistic Failure of Polycrystalline Silicon MEMS Structures," *Journal of the American Ceramic Society*, 98(6), 1685-1697.
- Le, Pieuchot, Ballarini (2014) "Effect of stress singularity magnitude on scaling of strength of quasibrittle structures", *Journal of Engineering Mechanics*, ASCE, 140(5): 04014011.
- Le, Pieuchot, Ballarini (2013) "Effect of stress singularities on scaling of quasibrittle fracture." *Proceedings of the 13th International Conference of Fracture*, Beijing, China, June 2013.
- Conference presentation:
 - Le and Ballarini (2013) "A finite weakest link model of failure statistics of polycrystalline silicon MEMS devices." *Proceedings of ASME International Mechanical Engineering Congress and Exposition*, San Diego, CA, November 2013.
- Mutual funding: National Science Foundation, (2014-2017) This was joint research on reliability of microelectromechanical systems made of silicon.

2. Can you please clarify whether the journal has a process to recuse editors who have competing interests with submissions from the handling of those manuscripts, and if that process is not in place, confirm what steps the journal will take to implement such a process?

Yes. For all ASCE Journals, Editors are asked to contact the editorial office when they have competing interests with any authors on incoming submissions. In those situations, the editorial staff blinds the Editor from the submission in the peer review system. The Editor must provide direction as to which AE should handle the submission in his or her stead. The editorial staff adds a note to the submission with the recusal and the handling Editor's name in the peer review system, and assigns the submission appropriately. The AE renders a final decision on the paper with no involvement from the Chief Editor.

If a Discussion is subsequently submitted in response to such a paper, the editorial staff would link the Discussion to the original paper, and refer to the note in the system regarding the Chief Editor's recusal from the original submission. The Discussion would therefore also not be handled by the Chief Editor.

Specific to JEM, as described in the previous reply, since becoming Editor, Dr. Ballarini has chosen to structure his Editorial Board such that he does not handle submissions beyond initial screening. In the initial screening, Dr. Ballarini assesses papers to determine, based on the topic, which AEs have the expertise and associated reviewer base. After the initial screening, for papers that Dr. Ballarini deems worth of review, he immediately assigns the submission to one of these AEs, who then sends the paper to reviewers. The AEs receive the reviews and make the final decision. Dr. Ballarini gets involved only with papers that involve issues such as plagiarism, fragmentation of research, and so forth. Very rarely—only when AEs in the topic area are handling too many papers—Dr. Ballarini may send a paper out to reviewers himself. Such a structure further mitigates any conflict, real or perceived, that Dr. Ballarini may have given the breadth of colleagues with whom he works around the world. This process has also reduced time to first decision for JEM to three months.

Please let me know if you have any remaining questions.

Best,

Dana Compton

Publisher, ASCE

From: Iratxe Puebla [REDACTED]
Sent: Tuesday, October 20, 2020 3:39 AM
To: Compton, Dana [REDACTED]
Cc: Richard Johns [REDACTED]; Ballarini, Roberto [REDACTED]
Subject: Re: Concerns raised to the attention of COPE

Dear Ms Compton,

Thank you for your response to our request for comments on Richard Johns' concerns about the handling of his submission to the *Journal of Engineering Mechanics*.

We appreciate the detailed summary you provided regarding the history of the submission. We have reviewed the information you supplied and we feel there are aspects of the procedural items that need further attention. Could you please provide comments on the items below:

1. We understand that as part of the items raised by Dr Johns, concerns were noted about potential competing interests on the part of the editors involved in the handling of his submission and appeal. We would be grateful if you could provide an outline of any potential competing interests for all editors involved in the handling of Dr Johns' submissions and appeal.

Potential competing interests include: a shared affiliation with the authors of the submission by Dr Johns or the authors of the article the submission critiqued, a collaboration with either group of authors within a few years prior to the publication, shared projects or funding for research. Any other financial or non-financial relationship outlined under the [ICMJE recommendations](#) should also be outlined.

2. You indicated that the publisher has a policy that expects editors to '*give unbiased consideration to all manuscripts offered for publication and shall judge each on its merits without regard to any personal relationship or familiarity with the author(s)...*'. In addition to having policies that outline expectations for an unbiased evaluation of manuscripts, it is important for the journal to have established processes in place to address competing interests on the part of the editors when those arise.

[Quoted text hidden]

[Quoted text hidden]

Exhibit R
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Iratxe Puebla [REDACTED]

31 October 2020 at 02:03

To: "Compton, Dana" [REDACTED]

Cc: Richard Johns [REDACTED] "Ballarini, Roberto" [REDACTED]

Dear Ms Compton,

Thank you for the further information you provided in relation to the handling of Richard Johns' submission to the *Journal of Engineering Mechanics*.

We appreciate the additional clarification provided in relation to the journal's policies and processes around competing interests. Having reviewed the information around competing interests you provided, we remain concerned about a couple of aspects:

- You indicate that the journal has a process where editors who have potential competing interests are blinded from the review process. It is however unclear how any potential competing interests on the part of the Chief Editor are managed, as you indicate the Chief Editor would still be involved in the initial screening of submissions and the assignment to an editor. Could you please provide further clarification on how situations where the Chief Editor has a potential competing interest are handled?
- In the case of Dr Johns' submission, it appears that a perceived competing interest may arise in relation to the Chief Editor's prior relationship with one of the authors of the publication that Dr Johns' submission is critiquing. As noted in earlier correspondence, the expectation per COPE guidelines would have been for Dr Ballarini to be recused from the editorial evaluation and decision for the manuscript. Could you please comment on this, and clarify what steps the journal took, or will take, to address this concern?

In consideration of the items above, we would also recommend that the journal reviews and updates its editorial policies around competing interests, to provide further clarity on what situations are deemed as constituting a competing interest (real or perceived) and that you consider incorporating a time element to the policies to clarify what timeframe applies when considering situations falling within the competing interests policy.

Many thanks again for your time and attention. We look forward to hearing from you.

With best wishes,

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
www.publicationethics.org

Registered charity No 1123023
Registered in England and Wales, Company No 6389120
Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

On behalf of

COPE Facilitation and Integrity subcommittee

[Quoted text hidden]



Richard Johns [REDACTED]

Concerns raised to the attention of COPE

Compton, Dana [REDACTED]
To: Iratxe Puebla [REDACTED]
Cc: Richard Johns [REDACTED], "Ballarini, Roberto" [REDACTED]

2 November 2020 at 08:32

Ms. Puebla,

Please see our responses below in green. I look forward to hearing further.

Thank you,

Dana

Dana Compton

Publisher, ASCE

From: Iratxe Puebla [REDACTED]
Sent: Saturday, October 31, 2020 5:03 AM
To: Compton, Dana [REDACTED]
Cc: Richard Johns [REDACTED], Ballarini, Roberto [REDACTED]
Subject: Re: Concerns raised to the attention of COPE

Dear Ms Compton,

Thank you for the further information you provided in relation to the handling of Richard Johns' submission to the *Journal of Engineering Mechanics*.

We appreciate the additional clarification provided in relation to the journal's policies and processes around competing interests. Having reviewed the information around competing interests you provided, we remain concerned about a couple of aspects:

- You indicate that the journal has a process where editors who have potential competing interests are blinded from the review process. It is however unclear how any potential competing interests on the part of the Chief Editor are managed, as you indicate the Chief Editor would still be involved in the initial screening of submissions and the assignment to an editor. Could you please provide further clarification on how situations where the Chief Editor has a potential competing interest are handled?

I may be misunderstanding your question. The Chief Editor is NOT involved in initial screening of submissions for which s/he has a competing interest. We do rely on our Chief Editors to alert us to a competing interest, which they regularly and reliably do. When a Chief Editor alerts us of a competing interest, the editorial staff immediately blinds the Chief

Editor to the submission. The Chief Editor does let the staff know which Associate Editor has the most appropriate expertise to handle the submission in his/her stead. As our editorial staff members do not have engineering backgrounds, they cannot make a determination as to who should act as handling Editor in the Chief Editor's place. The submission is assigned to that AE by the editorial staff, and the AE then handles the initial screening and all tasks moving forward that the Chief Editor would ordinarily handle, including rendering a decision. To make sure we are abundantly clear on this point: When a Chief Editor does **NOT** have a competing interest, his/her initial screening includes a review of the content and a decision to move the submission forward for review, and if so to which AE, or to render a quick reject without review. When a Chief Editor **DOES** have a competing interest, his/her initial screening serves **ONLY** to identify a suitable AE.

- In the case of Dr Johns' submission, it appears that a perceived competing interest may arise in relation to the Chief Editor's prior relationship with one of the authors of the publication that Dr Johns' submission is critiquing. As noted in earlier correspondence, the expectation per COPE guidelines would have been for Dr Ballarini to be recused from the editorial evaluation and decision for the manuscript. Could you please comment on this, and clarify what steps the journal took, or will take, to address this concern?

Again, per our earlier replies, Dr. Ballarini was not involved in handing the discussion, nor rendering a final decision. Dr. Willam was the handling Editor for the discussion as described below. The review, in retrospect, should have been written in clearer language that made clear which co-Editor took responsibility for the decision. To address this concern, ASCE now strongly discourages any co-Editor arrangements and, in the case where this is unavoidable, we require one Editor to take ultimate responsibility for rendering each of his/her final decisions (i.e., no "cosigning" of reviews as a formality). In the case of the Szamboti/Johns discussion, Dr. Ballarini became involved when the authors communicated directly with him to inquire about the status. As described in our earlier replies, the Journal was experiencing significant delays at the time, which eventually resulted in a new Editor appointment. Dr. Ballarini indicated to the authors at the time that he would urge Dr. Willam to expedite a decision, understanding that the tardiness in handling was unacceptable and not fair to the authors. This was the extent of Dr. Ballarini's involvement.

In consideration of the items above, we would also recommend that the journal reviews and updates its editorial policies around competing interests, to provide further clarity on what situations are deemed as constituting a competing interest (real or perceived) and that you consider incorporating a time element to the policies to clarify what timeframe applies when considering situations falling within the competing interests policy. Thank you for your suggestion. Upon resolution of this issue, and when we next update our Author Instructions, we will review our editorial policies re: competing interests.

Many thanks again for your time and attention. We look forward to hearing from you.

With best wishes,

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
www.publicationethics.org

Registered charity No 1123023
Registered in England and Wales, Company No 6389120
Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

On behalf of

COPE Facilitation and Integrity subcommittee

On Wed, Oct 21, 2020 at 6:47 PM Compton, Dana <DCompton@asce.org> wrote:

Dear Ms. Puebla,

Exhibit S
To Ethics Complaint
Amendment



Richard Johns · [REDACTED]

Concerns raised to the attention of COPE

Iratxe Puebla [REDACTED]

29 November 2020 at 01:12

To: Richard Johns <[REDACTED]>

Cc: "Compton, Dana" <[REDACTED]> "Ballarini, Roberto" <[REDACTED]>

Dear Dr Johns,

I am writing to you regarding the concerns you raised to COPE's attention in relation to the handling of your submissions to the *Journal of Engineering Mechanics*.

As you know, we have been in contact with the journal to request information related to the handling of your concerns. The journal has provided information on the steps taken to follow up on your concerns, the timeline for the handling of the manuscripts and around potential competing interests by the editors involved. Following requests from COPE, the journal agreed to review its policies and process to handle competing interests. We thank the journal for the information they have provided.

As indicated in previous correspondence, COPE's review of cases raised to our attention focuses on a review of the journal and publisher's process. Based on the information we received, we consider that the journal followed an adequate process to follow up on the issues raised, as they provided further clarification on the grounds for the rejection and on the editor involved in the handling of the submission. COPE considers that a couple of aspects in the handling of competing interests at the journal need attention and thus we recommend the journal pursues the following steps, which they indicated they'd take forward:

- Complete the update to the journal processes to recuse the Chief Editor from the initial screening and editor assignment if there is a competing interest on the part of the Chief Editor.
- Complete the review and update to the journal's competing interests policies to ensure the situations that fall within the framework for competing interests and how the journal would manage those is clear to readers on the journal's website.

We acknowledge that you disagree with the editorial decision for rejection but our review focuses on procedural matters and we cannot comment on individual editorial decisions, as those lie with the editor.

Based on the information we have received, we consider that the journal followed an adequate process in this case, and that they have agreed to take suitable steps to address the areas where process updates are required.

At this stage, we do not feel we can provide further advice within the framework of our Facilitation & Integrity process that goes beyond the actions taken by the journal and the recommendations above, as a result, we cannot further pursue this matter. Per our framework, we have developed a summary report of the case, which we attach to this email.

Thank you for bringing this matter to the attention of COPE.

With best wishes,

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
www.publicationethics.org

Registered charity No 1123023
Registered in England and Wales, Company No 6389120
Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

On behalf of

COPE Facilitation and Integrity subcommittee

 **Johns report.pdf**
133K

Exhibit T
To Ethics Complaint
Amendment

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
New Kings Court
Tollgate, Chandler's Ford
Eastleigh, Hampshire, SO53 3LG
United Kingdom

December 17, 2020

Re: Richard Johns and Tony Szamboti Discussion Paper Concern Submitted to COPE

Dear Ms. Puebla:

My name is Ted Walter. I am contacting you on behalf of Richard Johns and Tony Szamboti. They are the authors of the Discussion paper that was submitted to ASCE's *Journal of Engineering Mechanics* in May 2011 to identify errors in a paper the journal had published in January 2011, but was rejected as "out of scope" in August 2013.

Dr. Johns asked me to contact you because he is too busy with end of semester duties, and I am fully knowledgeable of the details of their case.

In the interest of full disclosure, I am the director of strategy and development for the organization Architects & Engineers for 9/11 Truth. My work portfolio includes assisting Dr. Johns and Mr. Szamboti in their efforts to have their duly submitted Discussion paper published in the *JEM*.

In addition, Mr. Szamboti and I were co-authors, along with two others, of an article published in the July-August 2016 issue of *Europhysics News*, entitled "15 years later: On the physics of high-rise building collapses." Also, as a reminder to you, and for the knowledge of Dr. Ballarini and Ms. Compton, I originally contacted you in July to inquire about whether it would be acceptable for COPE to review this case while there was a pending ASCE ethics complaint against Dr. Ballarini and Dr. Willam (that complaint is still ongoing).

We thank COPE and the Facilitation & Integrity Subcommittee for accepting the case and for the time and effort that went into reviewing it and providing advice to ASCE.

We are writing today to ask COPE to extend its review of the case because we dispute some of the key facts presented by Dr. Ballarini and Ms. Compton, and because we believe that this particular editorial decision — which was procedural and not technical in nature — is one that COPE is well-positioned to provide important advice on.

Last Friday, I spoke with and sent a follow-up email to Tara Hoke, the staff contact for the ASCE's Committee on Professional Conduct (CPC), to ask if ASCE would join us in welcoming COPE's advice on whether the "out of scope" decision was aligned with COPE's Core Practice on "Post-Publication Discussions and Corrections." As you know, this Core

Practice states that “journals must allow debate post publication.” Ms. Hoke advised that she would relay our proposal to Ms. Compton, and that it would ultimately be up to Ms. Compton to welcome or not welcome COPE’s advice on this question.

In any case, regardless of Ms. Compton’s decision to welcome or not welcome COPE’s advice on the “out of scope” decision, below I describe the reasons we are asking COPE to extend its review of the case, which are as follows:

- 1) We vigorously dispute the claim made by Dr. Ballarini and echoed by Ms. Compton that Dr. Ballarini was not involved in rendering the final decision.
- 2) Dr. Willam’s role in the NIST WTC investigation constitutes a clear competing interest, or at least the perception thereof.
- 3) The Engineering Mechanics Institute (EMI) Board of Governors and ASCE’s CPC have not followed an adequate process in response to the concerns raised by Dr. Johns and Mr. Szamboti.
- 4) The “out of scope” decision was procedural and not technical in nature. Thus, COPE is well-positioned to provide important advice on whether the “out of scope” decision was aligned with COPE’s Core Practice on “Post-Publication Discussions and Corrections.”

Ms. Hoke advised me on Friday that there is indeed precedent for the Facilitation & Integrity Subcommittee to extend its review of cases when presenters of concerns have asked the subcommittee to do so. We believe the reasons presented below provide ample basis for the subcommittee to extend its review of this case.

- 1) We vigorously dispute the claim made by Dr. Ballarini and echoed by Ms. Compton that Dr. Ballarini was not involved in rendering the final decision. We ask COPE at the very least to revise its case summary to reflect that Dr. Ballarini’s alleged non-involvement is disputed, and to advise ASCE what actions it should take if Dr. Ballarini was indeed involved in rendering the final decision, given his obvious competing interest that COPE has identified.**

The record shared by Dr. Johns in the attachments he emailed to COPE on July 24, 2020 (also attached hereto¹), and which he provided excerpts of in an email to COPE on October 17, 2020 (attached hereto²), shows clearly that Dr. Ballarini was at least involved in — if not equally or chiefly responsible for — the decision to reject the revised manuscript as “out of scope.” Nothing in the record supports the claim that Dr. Willam unilaterally rendered the final decision.

¹ Attached documents include: “2018 ASCE Ethics Complaint,” “2019 Ethics Complaint Supplement,” and “Appendix – Information Regarding Conflicts of Interest.”

² Document filename: Fwd_Concerns raised to the attention of COPE_Johns comments_10.17.20.pdf

Below are communications sent by Dr. Ballarini and the *JEM* to Dr. Johns and Mr. Szamboti between May and August 2013 (highlighting and underlining are added for emphasis).³ Please note that Dr. Ballarini clearly states his intention to render a final decision *in consultation* with Dr. Willam. Please also note that the language in the final decision is very similar to the language in Dr. Ballarini's email to Mr. Szamboti on July 8, 2013 — both in terms of style and in terms of Dr. Ballarini's stated editorial agenda.

From: Roberto Ballarini

Sent: Thursday, May 09, 2013 9:13 AM

To: Tony Szamboti

Subject: Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

*your discussion has been handled by Dr. Kaspar Willam; I will speak to him tomorrow about it.
Regards, Roberto Ballarini*

Roberto Ballarini [REDACTED] 9 May 2013 at 07:42 To: Richard Johns

Cc: Tony Szamboti [REDACTED], "Cochran, Angela"
[REDACTED], "Parresol, Jennifer" [REDACTED]

Mr. Johns:

I responded this morning that I have not been involved with this paper, and that I plan to discuss it with Prof. Willam tomorrow to learn what is the history of this submission. I do not know which individuals you are referring to in your statement "...they may be hoping...". I will give you the benefit of the doubt that this does not include me. If it does, and you believe I have some hidden agenda associated with the submission, please address your comments directly to me instead of cc'ing me on messages your write to your colleagues that include such unfair speculations.

Roberto Ballarini

From: Roberto Ballarini

Sent: Monday, July 08, 2013 9:03 AM

To: Tony Szamboti

Cc: Cochran, Angela ; Parresol, Jennifer ; Kaspar Willam

Subject: Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

³ PDFs of the original emails are contained in the "September 2018 ASCE Ethics Complaint," in Exhibits I, J, and K, from PDF pages 82 to 91.

last week I requested and received from the Journal office all papers, discussions and reviews it received and published that were associated with the World Trade Center. These hopefully will provide me with a better perspective on your submission. My objective is fairness, but as I stated previously, with the intention of ending what could potentially be a never ending discussion on this topic (the Journal is not the appropriate venue for such on going discussions).

I will do my best to read through what I have received over the next week or so. Then I will talk one more time to Dr. Willam to hear his opinion before making a decision.

Regards, RB

From: Roberto Ballarini

Sent: Monday, July 08, 2013 2:46 PM

To: Tony Szamboti

Subject: Re: Letter to the co-editors of the Journal of Engineering Mechanics

Mr. Szamboti:

On August 4 I will travel to Evanston for the ASCE EMI Conference. There will be an Editor/Associate Editor meeting at that conference that will be attended by Dr. Willam and some representatives from the Journals office. I will take this opportunity to meet person to person with Dr. Willam to discuss the appeal to your (declined) discussion, and determine whether the appeal has sufficient merit to overturn the original decision.

I agree with you that this process has taken too long, but I hope you will patient for a few more weeks. I prefer meeting with individuals face to face instead of carrying on multiple email conversations that can lead to confusion and delay.

I assure you that I will get back to you by the end of the first week of August.

Regards, RB

Journal of Engineering Mechanics [REDACTED] 9 August 2013 at 09:10 To: [REDACTED]

You are being carbon copied ("cc:'d") on an e-mail "To" "Anthony Szamboti"

[REDACTED] CC: [REDACTED]

Ref.: Ms. No. EMENG-1410R1

Appeal of decision on Ms. No. EMENG-1013 Anthony Szamboti, BSME; Richard Johns, PhD

Dear Mr. Szamboti,

Your Discussion, listed above, has completed the peer-review process for possible publication in ASCE's Journal of Engineering Mechanics. The editor's final decision was to decline the manuscript.

For your guidance, you will find below the reviewer's comments identifying those elements of the manuscript that prevent its acceptance by the Journal.

We realize that it takes a great deal of time and effort to prepare a paper for submission and we thank you for choosing the Journal of Engineering Mechanics for submission of your work

Sincerely,

Holly Koppel Publishing Manager

Reviewers' comments:

Your appeal of the decision on EMENG-1013 has been declined. This decision has been reached by the Co-Editors in Chief after a careful review of the original discussion, the review that recommended the discussion be declined, and your rebuttal to the review. The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers), but instead it is a journal for fundamental contributions to engineering mechanics. The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.

Please also note that, while Dr. Ballarini's email response to COPE on October 13, 2020, is mostly *inconsistent* with the record shown above, he refers to the decision about the *JEM's* scope as "our decision":

I became involved with dr John's' submission at the end of the affair when Dr Willam had made a decision to reject it. [INCONSISTENT WITH THE RECORD.] He is the one who was involved with its review (he sent it out for review etc), not me. I explained this numerous times. My involvement wad limited to the co-signing of the decision letter [INCONSISTENT WITH THE RECORD], which includes our decision that the Journal will not continue being a venue for detailed forensic analyses of the twin towers collapse.

In addition to plainly communicating his intention to render the final decision, Dr. Ballarini's obvious role in effectuating the final decision — following six months of inaction by Dr. Willam after the journal editorial office had asked him in February 2013 to "make an expedient decision" (according to Ms. Compton's email to COPE dated October 15, 2020) — also strongly suggests Dr. Ballarini was involved in rendering the final decision.

At this point in time, mere claims that Dr. Ballarini was not involved in rendering the final decision are not enough to negate what the record from 2013 actually shows.

In the absence of strong evidence showing that Dr. Willam rendered the final decision unilaterally, we ask COPE to resume its review of the case based on what the record actually shows: Dr. Ballarini, who had an obvious competing interest, was involved in the decision to reject the revised manuscript as "out of scope," consistent with his stated editorial agenda.

If COPE believes it is not able to make a determination as to Dr. Ballarini's involvement in rendering the final decision, we ask COPE at the very least to revise its case summary to reflect that Dr. Ballarini's alleged non-involvement in rendering the final decision is disputed —

by adding Dr. Johns' October 17, 2020 email as well as the relevant portions of this letter (including all emails from Dr. Ballarini and the rejection letter) to the case summary. We also ask COPE to advise ASCE what actions it should take if Dr. Ballarini was indeed involved in rendering the final decision, given his obvious competing interest that COPE has identified.

2. Dr. Willam's role in the NIST WTC investigation constitutes a clear competing interest, or at least the perception thereof. We ask COPE to evaluate whether Dr. Willam had a competing interest that may have interfered with, or could reasonably be perceived as interfering with, the objective handling of Dr. Johns and Mr. Szamboti's Discussion paper.

We believe that Dr. Willam's role as a contractor on the NIST WTC investigation constitutes a clear competing interest, or at least the perception thereof. This was implied by Ms. Compton's inclusion of Dr. Willam's contract with NIST in the list of "potential competing interests" provided to COPE, though she noted that the contract was awarded in 2003. If there were no potential for Dr. Willam's role in the NIST WTC investigation to be deemed a competing interest, Ms. Compton would not have listed it.

In terms of timeframe, NIST's final report on the collapse of the WTC towers was published in 2005, but it continued to serve (and still serves) as the federal government's official technical account of the WTC building failures, and it still lists Dr. Willam as a contractor.

The supplemental letter submitted to Ms. Hoke and the CPC in October 2019 as part of the 2018 ASCE Ethics Complaint (which Dr. Johns emailed to COPE on July 24, 2020, and is attached hereto) explains on pages 8 and 9 why Dr. Willam's role as a contractor on the NIST WTC investigation constitutes a competing interest. The relevant passage is shown below:

Willam's role as an independent contractor on the NIST World Trade Center Investigation appears to have conflicted significantly with his responsibility to "ensure an efficient and fair review" of Johns and Szamboti's Discussion Paper, stemming from the fact that their Discussion Paper ultimately challenges NIST's account of the World Trade Center failures.

Although the NIST report and the Bažant Le Paper are separate and distinct documents, they in fact constitute two critical and interdependent parts of the progressive collapse theory regarding the World Trade Center Towers. They are interdependent parts of the progressive collapse theory because the NIST report attempts to explain how the collapses initiated but does not attempt to explain how vertical collapse ensued, while the Bažant Le Paper attempts to explain how vertical collapse ensued but does not attempt to explain how the collapses initiated. The NIST report, published in 2005, states, "The focus of the Investigation was on the sequence of events from the instant of aircraft impact to the initiation of collapse for each tower," and concedes that NIST performed "little analysis of the structural behavior of the tower after the conditions for collapse initiation were reached." In a supporting volume of its report, NCSTAR 1-6, NIST cites

an earlier paper coauthored by Bažant as explaining how vertical collapse ensued and states its agreement with Bažant’s paper. (Appendix pages 56 and 59 to 62)

Therefore, publishing a Discussion Paper that showed the Bažant Le Paper to be erroneous — so erroneous that using the correct input values in the analysis produces the opposite computational result, which is that the fall of WTC 1’s upper section would have arrested after approximately 3 seconds in a natural collapse — would have effectively disproved the NIST report and the progressive collapse theory to which Willam was a contributor.

We accept that it would have been conceivable for someone in Willam’s position to “ensure an efficient and fair review” of Johns and Szamboti’s Discussion Paper. Therefore, we are not contending that Willam should necessarily have recused himself solely on the basis of being a contractor on the NIST World Trade Center Investigation.

However, the facts demonstrate unequivocally that Willam did not “ensure an efficient and fair review,” that he did not “give unbiased consideration to all manuscripts offered for publication,” and that he did not “facilitate publication of appropriate comments and/or papers identifying [the Bažant Le Paper’s] errors.” (See Publishing in ASCE Journals, “Obligations of Editors,” pages 6 and 7.)

Using “inference to the best explanation,” Willam’s professional association with the NIST report and the progressive collapse theory was very likely a motivating factor in his failure to fulfill his obligations as an editor.

Therefore, Dr. Willam’s handling of Dr. Johns and Mr. Szamboti’s Discussion paper should not be viewed in a vacuum. While Dr. Willam’s competing interest is perhaps not as obvious or flagrant as Dr. Ballarini’s, it nevertheless could reasonably be perceived as interfering with the objective handling of Dr. Johns and Mr. Szamboti’s Discussion paper.

The obvious and natural reading of the entire record related to Dr. Willam and Dr. Ballarini’s handling of the Discussion paper is that both editors had competing interests and both editors were involved in rendering the final decision. To suggest that only one of the editors had a competing interest, while the other editor had no competing interest and rendered the final decision on his own, is a convenient narrative for absolving both editors of unethical editorial practice, but has no basis in fact.

- 3. The Engineering Mechanics Institute (EMI) Board of Governors and ASCE’s Committee on Professional Conduct (CPC) have not followed an adequate process in response to the concerns raised by Dr. Johns and Mr. Szamboti, first via Dr. Johns and Mr. Szamboti’s appeal of the final decision in 2013 and second via their still-pending ethics complaint filed in 2018. COPE’s advice on the “out of scope” decision — which is procedural and not technical in nature, as discussed in section 4 below — is acutely needed in light of the CPC’s position that the “out of scope” decision is not an “ethics**

issue” because, the CPC states, “editors should have broad discretion to determine the scope of their journals.”

Perhaps the most demoralizing aspect of Dr. Johns and Mr. Szamboti’s experience of trying to have their duly submitted Discussion paper published has been the total lack of accountability that followed Dr. Ballarini and Dr. Willam’s “out of scope” decision.

First, the EMI Board of Governors ruled that Dr. Johns and Mr. Szamboti “were treated fairly and all ASCE Publication processes were properly followed,” but did not substantiate its finding whatsoever. EMI President Roger Ghanem’s letter to Dr. Johns and Mr. Szamboti on September 16, 2013, read as follows⁴:

Dear Mrs. Johns and Szamboti,

The Engineering Mechanics Institute Board of Governors reviewed your appeal of the decision on your submitted discussion, “Reply and discussion of the paper Why the Observed Motion History of the World Trade Center Towers is Smooth By Ja-Liang Le and Zdenek Bazant (EMENG-1013).

While it is unfortunate that the review of your discussion and the appeal was not done in a timely fashion, please know that this was not intentional. There was a period during 2012 when most papers experienced significant delays.

The ASCE Journals Director provided a timeline, all submissions, and correspondence to review. Upon review of these facts and your specific complaint, the Board feels that you were treated fairly and all ASCE Publication processes were properly followed. We understand that there was some confusion when you received a letter from ASCE requesting minor changes. This decision was on the appeal (EMENG-1410), not the discussion. This decision letter was necessary in order to get a slightly reformatted appeal document from you.

Thank you for your interest in the Journal of Engineering Mechanics and for bringing your concerns to our attention.

In fact, ASCE Publication process do not provide for an “out of scope” decision to be rendered after a paper has been sent out for review, then rejected, then appealed, and then a revised manuscript has been requested by the journal and submitted by the authors. The “out of scope” decision is available to editors only upon initial review when papers are first received. Moreover, ASCE Publication processes require editors to “facilitate publication of appropriate comments and/or papers” when editors are presented with convincing evidence that a published paper is erroneous. While Dr. Ballarini and Dr. Willam may claim they were not presented with such convincing evidence, it defies both reason and fundamental principles of science and publication ethics to suggest that a Discussion paper claiming such errors in a previously

⁴ A PDF of the original letter is contained in the September 2018 ASCE Ethics Complaint, Exhibit L, PDF page 93.

published paper is “out of scope,” when that Discussion paper has been submitted by the applicable deadlines.

As for whether Dr. Johns and Mr. Szamboti were treated fairly, the EMI Board of Governors provided no explanation for why it was fair to publish a separate Discussion paper of the original paper by Dr. Le and Dr. Bazant in September 2012 (<https://ascelibrary.org/doi/full/10.1061/%28ASCE%29EM.1943-7889.0000325>), but not Dr. Johns and Mr. Szamboti’s Discussion paper. We view this as obviously and categorically unfair.

Since the EMI Board of Governors review was totally non-transparent, our best guess based on communications sent after the review is that the Board of Governors did not actually know the Discussion paper was rejected as “out of scope,” and they did not know that a separate Discussion paper of the original paper was deemed within scope — or they completely ignored these facts. Communications shown below from ASCE Journals Director Angela Cochrane and EMI President Roger Ghanem indicate that the Board of Governors reviewed the case as if the Discussion paper had been rejected on technical grounds⁵:

Angela Cochrane, September 26, 2013:

It is your opinion that there are errors in the original paper. The reviewers did not agree with your position as stated in your submitted discussion. The editors and the board stand by the initial review.

In fact, the editors did not state that they stood by the initial review in their final decision. They stated the Discussion paper was rejected “because it is out of scope.” Therefore, it was false to state that the editors stood by the initial review, and invalid to state that the board stood by the initial review when that was not the basis for the final decision.

Roger Ghanem, October 18, 2013:

While your paper may very well be within the scope of the Journal, the Board's review of your case was concerned with whether or not the submission was treated fairly and in a manner that is consistent with the policies of the Journal of Engineering Mechanics. The Board found that indeed, the processing of your paper by the Editors was in conformance with these policies. As such, the Board must stand by the decision that was communicated to you by the Editors.

Here, President Ghanem appears to be unaware that the Discussion paper was rejected as “out of scope,” and unaware that the Board’s review should have been primarily concerned with whether the “out of scope” decision was fair and consistent with the policies of the *JEM*. If the Discussion paper is actually within the scope of the journal — which we contend it obviously is

⁵ See 2018 ASCE Ethics Complaint, PDF pages 95 and 98.

— then Dr. Johns and Mr. Szamboti were most definitely not treated fairly or in a manner consistent with the policies of the *JEM*.

It must be noted here, as it was noted in Dr. Johns’ concern submitted to COPE, that Dr. Ballarini was a member of the EMI Board of Governors at that time — specifically he was its treasurer — and he was the incoming EMI president, set to begin his term on October 1, 2013, less than a month from the time of the Board of Governors review. Dr. Johns and Mr. Szamboti were not provided any assurances that Dr. Ballarini was recused from the Board’s decision or that measures were taken to mitigate any competing interests on the part of the other board members.

By 2017, Dr. Johns and Mr. Szamboti discovered the ASCE’s ethics complaint process and determined that this process offered a promising avenue to having the Discussion paper published. Joined by 10 ASCE members — which guaranteed that their complaint would be granted a disciplinary hearing before the ASCE Executive Committee if the CPC could not mediate a resolution to the dispute or found no violation of the ASCE Code of Ethics (without the support of at least 10 ASCE members, the CPC must conclude that a violation occurred for a complaint to be referred to the Executive Committee) — Dr. Johns and Mr. Szamboti submitted their ethics complaint in September 2018. The complaint, which includes all correspondence related to the submission, was emailed to COPE by Dr. Johns on July 24, 2020.

Dr. Johns and Mr. Szamboti believed they had a very strong case that the editors had violated the ASCE Code of Ethics. As such, they believed they were in a strong position to ask for the obvious remedy of having the revised manuscript reviewed and published if no errors were found, in which case they would drop the ethics complaint. To their surprise, Dr. Ballarini refused to grant the technical review to which the revised manuscript was entitled when it was submitted in June 2012. Then, on October 2, 2019, again to their surprise, Ms. Hoke communicated the CPC’s position to them as follows:

Ultimately, the CPC feels that the concerns you raised are not an “ethics” issue. They felt that editors should have broad discretion to determine the scope of their journals, and they were not supportive of providing ethical scrutiny for an editor’s decision to accept or reject content in the absence of a strong indication of fraud, conflict of interest, or similar malfeasance—which they did not see in this case. [Underling added.]

In response, Dr. Johns, Mr. Szamboti, and the 10 ASCE members submitted the 2019 Ethics Complaint Supplement on October 29, 2019, which objected to the rationale that editorial discretion should be so broad that editors can reject duly submitted Discussion papers as “out of scope,” and provided a large amount of information illustrating the editors’ competing interests.⁶ Dr. Johns and Mr. Szamboti felt that the editors’ actions alone were enough to demonstrate that the editors had acted unethically, but they nevertheless submitted the competing interest information because that appeared to be the only way the CPC would “provide ethical scrutiny.”

⁶ See “2019 Ethics Complaint Supplement.” For information on conflicts of interest, see pages 6 to 9 of the supplement as well as “Appendix – Information Regarding Conflicts of Interest.”

Despite sharpening their position on why the “out of scope” decision was indeed an “ethics issue” and despite providing ample evidence of competing interests, Ms. Hoke informed them in June 2020 that the CPC still believed Dr. Ballarini and Dr. Willam had not violated the ASCE Code of Ethics. (Dr. Johns and Mr. Szamboti have nothing in writing from the CPC, so their limited understanding of the CPC’s current position is based on telephone conversations with Ms. Hoke, and they do not know the CPC’s basis for this finding.)

Dr. Johns and Mr. Szamboti now find themselves in a position where the committee charged with enforcing ASCE’s Code of Ethics believes that the actions of Dr. Ballarini and Dr. Willam are not an “ethics issue” — even though Dr. Johns and Mr. Szamboti have demonstrated significant competing interests on the part of both editors, and even though “Post-Publication Discussions and Corrections” are a Core Practice of COPE (the Committee on Publication Ethics), of which ASCE is a member.

It is in this context that Dr. Johns and Mr. Szamboti seek COPE’s advice as to whether the “out of scope” decision was in alignment with COPE’s Core Practices. Without COPE’s advice, the CPC and other bodies at ASCE may continue to maintain that editors are permitted to reject any Discussion paper they wish to as “out of scope,” including ones that merely claim to identify errors in previously published papers. In addition, without COPE’s advice, the unjust, unethical, and unscientific treatment of Dr. Johns and Mr. Szamboti’s Discussion paper is likely to be made permanent.

4. The “out of scope” decision was procedural and not technical in nature. As such, COPE is well-positioned to provide important advice as to whether the “out of scope” decision was in alignment with COPE’s Core Practice on Post-Publication Discussions and Corrections, which states that “journals must allow debate post publication.”

During our conversation last Friday, Ms. Hoke informed me that the main reason the Facilitation & Integrity Subcommittee does not review individual editorial decisions is because members of the subcommittee are most likely not experts in the field of a given journal, and thus they are not qualified to evaluate the decisions of editors.

However, as I communicated to Ms. Hoke, this editorial decision is entirely procedural and not technical in nature. One needs only to read the editors’ comments in the rejection letter, shown above (specifically, “The Co-Editors stand by their previous decision to decline your discussion because it is out of scope”) to understand there was no technical basis for the final decision, and therefore this is a procedural matter rather than a technical one. We are not asking COPE to evaluate the technical merit of the initial reviewer’s comments or the technical merit of Dr. Willam’s initial decision to reject the Discussion paper. Rather, we are asking COPE to evaluate whether it was in alignment with COPE’s Core Practices for Dr. Ballarini and Dr. Willam to reject the revised manuscript as “out of scope.” This question requires no technical expertise in the field of engineering mechanics. This exact scenario could occur in the context of any journal and the ethical nature of the “out of scope” decision would be the same.

Perhaps there are good reasons, besides the one stated by Ms. Hoke, that the Facilitation & Integrity Subcommittee does not evaluate individual editorial decisions. For one, the purpose of COPE is not to regulate and hold accountable its members. Evaluating individual editorial decisions might tend to put COPE in the role of an adjudicator, which is not its intended role. Moreover, since COPE is a membership organization dedicated to educating its members, presumably it is important for COPE to maintain positive, constructive relationships with its members. Evaluating individual editorial decisions could occasionally undermine that special relationship. In this case, however, there seems to be a clear opportunity for COPE to provide advice that can help ASCE determine how broad its editors' discretion should be when it comes to post-publication discussion, without COPE overstepping its role as an educator or causing any strain on its relationship with ASCE.

Moreover, COPE's review of this editorial decision could help resolve a dispute that calls out for a resolution that is just and in the interest of science. The primary role of the Facilitation & Integrity Subcommittee is to "facilitate the resolution of disputes in a manner that is consistent with COPE's mission," and that mission is to advance scholarly integrity. We believe the resolution of this dispute in a manner that is consistent with COPE's mission is still possible if COPE applies its expertise in publication ethics to evaluating this editorial decision.

When Dr. Johns and Mr. Szamboti began this process with COPE, they thought there was a mutual commitment from ASCE to having COPE provide advice on the ethical appropriateness of the "out of scope" decision. We hope that was actually the case, and that ASCE will now join us in welcoming COPE's advice on the ethical appropriateness of the "out of scope" decision. However, we also maintain that COPE is well-positioned to further its mission by providing advice on this question even if ASCE decides not to welcome COPE's advice on this question.

For the reasons stated above — which include Dr. Ballarini's involvement in rendering the final decision, Dr. Willam's competing interest, the lack of accountability provided by the EMI Board of Governors and ASCE's CPC, and the fact that the "out of scope" decision was procedural and not technical in nature — we kindly ask COPE to extend its review of this case.

Sincerely yours,

Ted Walter
Director of Strategy and Development
Architects & Engineers for 9/11 Truth

Cc: Dr. Roberto Ballarini
Ms. Dana Compton
Dr. Richard Johns
Mr. Tony Szamboti

Exhibit U
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE by Richard Johns

Iratxe Puebla [REDACTED]

22 January 2021 at 00:04

To: "Compton, Dana" [REDACTED]

"Ballarini, Roberto" [REDACTED]

Cc: Richard Johns [REDACTED]

Dear Ms Compton,

We are writing to you regarding the concerns that Richard Johns raised to COPE regarding the handling of his submission to the *Journal of Engineering Mechanics*.

As you know, COPE reviewed the matter some weeks ago, we made recommendations for changes to the journal's competing interests policy and processes and we completed our review of the matter. Dr Johns and his co-author Dr Szamboti responded to COPE's review and raised further concerns about the handling of the second rejection of their submission as out of scope. In light of their comments, the Facilitation and Integrity subcommittee revisited the case with input from a second subcommittee member. Following this review, we have identified a couple of areas of the case where we would appreciate some further clarification from the journal.

Could you please provide comments on the items outlined below, so that we can establish how those relate to COPE' Core Practices and expectations:

1. Dr Johns and Dr Szamboti's submission discussed concerns, which they described to us as 'straightforward and fatal errors', about an earlier publication in the journal by Le and Bazant. COPE advises editors to follow up on concerns raised about publications in their journal, could you clarify whether the *Journal of Engineering Mechanics* pursued a review of the issues raised about the publication by Le and Bazant? If such an evaluation was pursued, we would be grateful if you could provide details on the process followed to complete the assessment; if the evaluation was not pursued, could you please comment on the context that led to a decision not to look into the issues raised.
2. Dr Johns and Dr Szamboti's second submission to the journal was rejected as out of scope. In your earlier responses you indicated that this was due to a change in editorial scope where the Editor-in-Chief had established that the journal would no longer consider submissions related to the World Trade Center. Could you please confirm the date at which this change in editorial policy regarding the journal's scope took place, and whether this change in scope was documented publicly?

We would very much appreciate your further comments to help us evaluate Dr Johns' remaining concerns.

Many thanks again for your attention to this matter. We look forward to hearing from you.

With best wishes,

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
www.publicationethics.org

Registered charity No 1123023
Registered in England and Wales, Company No 6389120
Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

On behalf of

COPE Facilitation and Integrity subcommittee



Richard Johns [REDACTED]

Concerns raised to the attention of COPE by Richard Johns

Compton, Dana [REDACTED]

8 February 2021 at 08:18

To: Iratxe Puebla <[REDACTED]>

Cc: Richard Johns <[REDACTED]>

"Ballarini, Roberto" <[REDACTED]>

Dear Ms. Puebla,

Thank you for your note and additional questions. Please see ASCE's responses below.

1. Dr Johns and Dr Szamboti's submission discussed concerns, which they described to us as 'straightforward and fatal errors', about an earlier publication in the journal by Le and Bazant. COPE advises editors to follow up on concerns raised about publications in their journal, could you clarify whether the *Journal of Engineering Mechanics* pursued a review of the issues raised about the publication by Le and Bazant? If such an evaluation was pursued, we would be grateful if you could provide details on the process followed to complete the assessment; if the evaluation was not pursued, could you please comment on the context that led to a decision not to look into the issues raised.

Drs Johns and Szamboti submitted a Discussion related to the publication by Drs Le and Bazant in May 2011. As described in ASCE's original response to COPE's inquiry, that Discussion went through a technical review, and Drs Johns and Szamboti received a decline decision, rendered by Dr. Willam, in May 2012. This decision was a decline ***for technical reasons.*** That is, the reviewer found substantial technical issue with Dr Johns' and Szamboti's Discussion submission, and extensive comments were provided to the authors with the decline decision.

To be clear, the Le and Bazant paper has been subject to post-publication scrutiny, as another related Discussion was submitted by a different author, also in 2011, and published in 2012. That Discussion can be found here: <https://ascelibrary.org/doi/10.1061/%28ASCE%29EM.1943-7889.0000325>. In both cases, the Editor, Associate Editors, and reviewers involved (a) assessed the technical merit of the Discussions and (b) evaluated the concerns presented with regard to the Le and Bazant paper within the context of the technical merit of the Discussion.

2. Dr Johns and Dr Szamboti's second submission to the journal was rejected as out of scope. In your earlier responses you indicated that this was due to a change in editorial scope where the Editor-in-Chief had established that the journal would no longer consider submissions related to the World Trade Center. Could you please confirm the date at which this change in editorial policy regarding the journal's scope took place, and whether this change in scope was documented publicly?

To be clear, Drs Johns and Szamboti did ***not*** submit a second submission to the journal. Rather, in June 2012, they appealed the decline decision on the original Discussion.

The Editor declined the appeal in August 2013. The decline letter advised the authors that the Editor conducted a careful review of the original Discussion, the technical review that recommended the Discussion be declined, and the authors' rebuttal to the review. Following such review, the Editor stood by the initial decision. The letter further stated that *JEM* is not a forensics journal and therefore is not an appropriate forum for ongoing forensic debate associated with a specific case study (in this case, the collapse of the World Trade Center towers). As explained in ASCE's original response to COPE's inquiry, the decision letter on the appeal was written as a courtesy under the authority of both co-Editors.

This is not a matter of change in editorial scope, but rather upholding on appeal the decision of the original technical review. Further, since Dr Ballarini has taken the helm as sole Editor of *JEM*, he has held fast to the philosophy that *JEM* is not an appropriate forum for back-and-forth forensic debate but rather is a journal for fundamental contributions to engineering mechanics. As such, he has chosen not to consider submissions on this topic. However, that was not the reason for the decline of the appeal—the appeal was declined because, after further review, the Editor upheld the technical decision on the initial submission.

Best,
Dana Compton

Publisher, ASCE

[Quoted text hidden]

Exhibit V
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE by Richard Johns

Richard Johns [REDACTED]

9 February 2021 at 09:59

To: Iratxe Puebla <[REDACTED]>

Cc: "Compton, Dana" <[REDACTED]>

Dear Ms Puebla,

I received Ms Compton's response to your questions, and I want to respond. I want to make sure that the members of the Facilitation and Integrity subcommittee are aware that Ms Compton's account of the JEM's actions contradicts the emails sent by the Journal's editors at the time.

Ms. Compton mentions the JEM's new policy of not publishing forensic discussions of the World Trade Center, and then writes: "**However, that was not the reason for the decline of the appeal—the appeal was declined because, after further review, the Editor upheld the technical decision on the initial submission.**" Note that **she omits any mention here of our discussion paper being out of scope.** However, the full text of the email we received from the editors states:

Your appeal of the decision on EMENG-1013 has been declined. This decision has been reached by the Co-Editors in Chief after a careful review of the original discussion, the review that recommended the discussion be declined, and your rebuttal to the review. The Journal of Engineering Mechanics is not a forum for on-going and potentially never-ending forensic opinions associated with a specific case study (in this case the collapse of the World Trade Center towers), but instead it is a journal for fundamental contributions to engineering mechanics. The Co-Editors stand by their previous decision to decline your discussion because it is out of scope.

The text does mention carefully reviewing the technical documents, but does not say that our discussion was rejected on this basis. Instead, in the final sentence the editors state explicitly "The Co-Editors stand by their previous decision to decline your discussion **because it is out of scope.**" Perhaps Ms Compton wishes that the editors had said something else, but wishing doesn't make it so. It's also clear that the part about the JEM not being a forum for forensic opinions is intended to support the "out of scope" decision. If our discussion were being rejected for technical reasons, this sentence would have no relevance at all, and I cannot imagine why the editors would include it.

Finally, a rejection for technical reasons is almost always justified by pointing out errors in the manuscript. As a journal reviewer myself, after spending a significant amount of time to analyse someone's work, and find mistakes in it, it would be ridiculous not to share these with the authors. It doesn't take any extra effort, and it's of enormous benefit to them. And the rebuttal we wrote in this case was not saying anything very complicated -- mostly just showing that data we used is indeed provided by the relevant NIST reports, as well as Bazant's previous work, and we were using standard engineering formulas. A mistake of this sort would be very easy to point out, whereas if a manuscript is out of scope then there is no need to do so.

Looking at all the evidence, then, it is very clear that the rejection of our discussion was on the (supposed) basis of being out of scope.

Best wishes,

Richard Johns

[Quoted text hidden]

[Quoted text hidden]

Exhibit W
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to the attention of COPE by Richard Johns

Iratxe Puebla [REDACTED]
To: Richard Johns [REDACTED]
Cc: "Compton, Dana" [REDACTED]

10 February 2021 at 00:43

Dear Dr Johns,

I acknowledge receipt of your email, I have raised it to the attention of the members of the Facilitation and Integrity subcommittee.

With best wishes,

Iratxe

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
www.publicationethics.org

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[Quoted text hidden]

Exhibit X
To Ethics Complaint
Amendment



Richard Johns [REDACTED]

Concerns raised to COPE regarding your submission to the Journal of Engineering Mechanics

Iratxe Puebla [REDACTED]

8 April 2021 at 00:26

To: Richard Johns [REDACTED]

Cc: "Compton, Dana" [REDACTED], "Ballarini, Roberto" [REDACTED]

Dear Dr Johns,

I am writing to you regarding the concerns you raised to COPE's attention in relation to the handling of your submission to the *Journal of Engineering Mechanics*.

In response to the Facilitation and Integrity subcommittee's decision on the case, you raised remaining concerns in relation to the information provided by the journal and about the handling of the second rejection of your submission as out of scope. The Facilitation and Integrity subcommittee considered your concerns and invited an independent subcommittee member to review the matter. Following this review, the subcommittee has sought further clarification from the journal in relation to the handling of the concerns outlined regarding the publication by Le and Bazant, and about the handling for the second rejection of your submission.

In response to COPE's request, the journal has clarified that they gave the concerns about the publication by Le and Bazant due consideration, in the context of the items you had outlined as well as additional scrutiny raised by other discussions on the article. The journal established that there were no concerns about the original publication which required corrections to the record.

The journal has also indicated that their consideration of the second submission was done as an appeal on the first rejected manuscript and not as a second submission to the journal. Upon consideration of the appeal per the journal's process, the editor decided to uphold the initial decision for rejection, due to the technical concerns outlined in the initial rejection and which the editor considered remained in the version of the manuscript considered on appeal.

On the basis of the information received, we consider that the journal followed an adequate process, as they gave the concerns about the publication by Le and Bazant due consideration, and also considered the appeal on the original rejection of your commentary. As previously noted, COPE's review is focused on the procedural aspects of the follow up, we cannot comment on editorial decisions such as the individual rejection of your commentary, such determination lies with the editor.

While we consider that the journal followed an adequate process, we feel that a few areas of the journal policies and practices could be strengthened and we make the following recommendations for the journal:

- As previously indicated, the journal should complete a review and update to the journal's competing interests policies to ensure the situations that fall within the framework for competing interests and how the journal would manage those is clear to readers on the journal's website. This should also include the update to the processes to recuse the Chief Editor from the initial screening and editor assignment if they have a competing interest.
- An important aspect of the concerns about the case relate to the reasons behind the rejection of the appeal. The subcommittee considers that this may have been prevented by clearer language in the editorial decision issued in response to the appeal request, we recommend the journal reviews their process for editorial decisions to ensure that the letters for authors are as clear as possible in the future, particularly regarding decisions for rejection.
- We understand that the journal has now made a decision not to consider submissions that debate certain specific events e.g. those pertaining to the World Trade Center. We recommend that this information regarding submissions that will not be considered by the journal is included in the journal's Information for authors page, so that the information is clear for any future contributors.

The subcommittee has no further advice on the matter beyond the recommendations above, and thus, we consider the matter closed.

We attach to this email an updated report with the summary of the case. Thank you again for raising this matter to the attention of COPE.

Sincerely,

Iratxe Puebla
Facilitation and Integrity Officer
Committee on Publication Ethics (COPE)
www.publicationethics.org

Registered charity No 1123023
Registered in England and Wales, Company No 6389120
Registered office: COPE, New Kings Court, Tollgate, Chandler's Ford, Eastleigh, Hampshire, SO53 3LG, UK

On behalf of

COPE Facilitation and Integrity subcommittee

 **Johns report_April 2021.pdf**
140K

Exhibit Y
To Ethics Complaint
Amendment

Presenter of case: Richard Johns

COPE member involved: *Journal of Engineering Mechanics*; ASCE

Date at which case was received: 24 July 2020

Summary of issue, as outlined by presenter

I am submitting this concern regarding a discussion paper of mine (co-authored with Anthony Szamboti). The discussion paper was criticizing a paper already published in the JEM, and we believe that we identified straightforward and fatal errors in the original paper. Nevertheless, our discussion paper was finally rejected as “out of scope” for the journal. Our discussion paper did initially receive a technical review and was declined on the basis of that review on May 31, 2012, exactly one year after it was submitted. However, this review did not find any substantive error in our manuscript, so we appealed the decision and submitted a revised manuscript that we thought would clarify our position and avoid misunderstandings. However, rather than completing a technical review of the revised manuscript, as initially promised and acted upon, the JEM later rejected the revised manuscript as “out of scope.” (This occurred in August 2013, i.e., 14 months after the revised manuscript was submitted, and more than two years after the first version was submitted. It is also of note that the JEM published another author’s discussion of the original paper — submitted on the same day as ours — in October 2012.)

In September 2013, one month after our discussion paper was finally rejected as “out of scope,” the ASCE’s Engineering Mechanics Institute (EMI) Board of Governors, which oversees the JEM, reviewed the matter and determined that we “were treated fairly and all ASCE Publication processes were properly followed.” However, post-review communications from EMI President Roger Ghanem and ASCE Journals Director Angela Cochran indicate that the EMI Board of Governors reviewed and decided the matter as if our revised discussion paper had been rejected on technical grounds, based on the initial peer review, rather than being rejected as “out of scope,” which was the basis given for the final rejection. There was also no justification given for the claim that we were treated fairly, especially considering the fact that another author’s discussion paper, of the same original paper, was found within the JEM’s scope. Also, one of the two editors who rejected the discussion paper as “out of scope” was the treasurer and president-elect of the EMI Board of Governors at the time, which calls into question the impartiality of the other members of the EMI Board of Governors. (The fact that the editor went on to serve as the president of the EMI Board of Governors, at the same time that he was serving as the chief editor of the JEM, is also a cause for concern.) We were not given the opportunity to participate in the EMI Board of Governors’ review, which would have allowed us to make the case that the “out of scope” rejection was inappropriate for a duly submitted discussion paper. This probably contributed to the EMI Board of Governors incorrectly reviewing the case as if the discussion paper had been ultimately rejected on technical grounds.

We (the authors of the discussion paper) along with 10 ASCE members submitted an ethics complaint against the two editors to the ASCE’s Committee on Professional Conduct (CPC) in September 2018 (one of the two editors is still the JEM’s chief editor). Our goal in doing so has been to use the ASCE ethics process as a vehicle for reaching the proposed resolution of having the JEM review the revised

manuscript and publish it if no fatal errors are found. We do not seek disciplinary action against the editors.

About one year after the complaint was submitted, on October 2, 2019, Tara Hoke, a staff member for the CPC, wrote to me and the other complainants: “Ultimately, the CPC feels that the concerns you raised are not an ‘ethics’ issue. They felt that editors should have broad discretion to determine the scope of their journals, and they were not supportive of providing ethical scrutiny for an editor’s decision to accept or reject content in the absence of a strong indication of fraud, conflict of interest, or similar malfeasance—which they did not see in this case.”

In response, on October 29, 2019, we submitted a supplement disputing the notion that the editorial discretion granted to ASCE editors should be so broad that they are allowed to reject duly submitted discussion papers as “out of scope,” and that presents new information regarding the editors’ serious conflicts of interest.

Finally, in July 2020, Tara Hoke informed me and one of the ASCE member complainants via telephone that the CPC believes conflicts of interest did not play a role in the editors’ decision, and that the CPC will recommend to the ASCE Executive Committee against finding that the editors violated the ASCE Code of Ethics.

In response to this development, we (the authors and complainants) proposed submitting the case to COPE’s Subcommittee on Facilitation and Integrity in hopes of obtaining guidance and advice for how ASCE should handle the case. Now that the CPC has completed its review of the case, the case is set to be heard by the ASCE’s Executive Committee in a formal disciplinary hearing, which is mandatory because the complaint was supported by 10 ASCE members. However, we have always viewed the Executive Committee’s disciplinary hearing as a last resort. We still wish to seek a resolution through the CPC, whose official mandate is to “exercise every means possible to resolve . . . charges of professional misconduct through measures other than reference to the Executive Committee.” Tara Hoke has advised that ASCE has agreed for the case to be referred to COPE, and that ASCE would welcome COPE’s guidance and advice before deciding the matter.

What aspects of the Core Practices do you believe that the member is contravening, and why?

We believe that the following five core practices have been contravened in some manner: Post-publication discussion and corrections; Conflicts of interest / Competing interests; Complaints and appeals; Allegations of misconduct; Peer review processes.

With regard to post-publication discussion and corrections, we believe the editors violated the core practice by not allowing for debate post publication. We believe it is highly inappropriate for a duly submitted discussion paper to be considered “out of scope” — especially one that claims to identify straightforward and fatal errors in a published paper. Based on the ethical obligations of editors outlined in “Publishing in ASCE Journals,” the editors should actually have had a heightened interest in evaluating the validity of the claims made in our discussion paper and taking due action if the original paper was found to be erroneous.

With regard to conflicts of interest, we believe that editor Roberto Ballarini should have recused himself because of his relationship with one of the original paper's authors (Ballarini was a supervisor/co-worker of Jia-Liang Le at the University of Minnesota, and the two of them co-authored a number of papers that were published around that time). The other conflicts of interest stated in the October 2019 ethics complaint supplement perhaps do not rise to the level of requiring recusal. However, in hindsight, they should be viewed as having possibly motivated the actions of the editors. Furthermore, we feel that the EMI Board of Governors' review of the case did not safeguard against conflicts of interest between the members of the board and the editors — one of whom, as mentioned above, was the board's treasurer and had just been elected by the board to be the next EMI president.

With regard to complaints and appeals as well as allegations of misconduct, we believe the JEM and ASCE do not have a clearly described process for handling complaints against the journal, its staff, or its editorial board, nor for handling allegations of misconduct, at least at the journal/EMI level. "Publishing in ASCE Journals" provides only the following, which does not actually describe the process at all:

"ASCE will keep confidential the names and affiliations of individuals who report possible misconduct related to the authors, editors, and reviewers associated with ASCE journals. Individuals wishing to make a report should contact the ASCE managing editor at journal-services@asce.org. Accusations must be specific in order to allow for ample investigation."

We believe this lack of a clearly described process for complaints and appeals contributed to the lack of transparency and due process we experienced during the EMI Board of Governors review.

We also believe our allegations of misconduct, on the whole, have not been taken seriously by both the EMI Board of Governors and the CPC. We expected a much more thorough investigation of the matter by both bodies. As noted above, we were not given the opportunity to make our case directly to the EMI Board of Governors, and we were never told what information was presented to them. Similarly, we have not been contacted by any member of the CPC since submitting the complaint in September 2018. Our impression is that the CPC has conducted few interviews with the ASCE personnel involved in the handling of our discussion. We also surmise that the investigative questions we posed in our October 2019 supplement have not been answered.

With regard to the peer review process, we feel the peer review of our discussion paper was not well-managed from beginning to end. It took 365 days to receive a decision on our paper, while the author of the other discussion paper received a decision within 70 days. Although the reviewer of our discussion paper did not identify substantive errors in it, our paper was nevertheless rejected. After submitting our appeal and revised manuscript, we were informed that the review would be handled quickly. Instead, we waited over a year to receive a final decision, contacting the JEM and ASCE journal staff several times. Of particular note, we were informed in October 2012 that a peer review of the revised manuscript was underway, but that peer review either was never completed or the results of it were never reported to us.

Member's response

Thank you for reaching out to ASCE and Dr. Ballarini about this situation. Please find our responses to your specific queries below:

- *A summary and timeline of the steps taken to handle Dr Johns' submissions.*
- An article entitled "Why the Observed Motion History of World Trade Center Towers Is Smooth" by Jia-Liang Le and Zdenek P. Bazant was published in the *Journal of Engineering Mechanics* January 2011 issue (Volume 137, Issue 1). Dr. Ross Corotis was the Chief Editor for *JEM* at the time of this paper's acceptance and rendered the final decision in September 2010.
- Subsequent to this publication, Dr. Szamboti and Dr. Johns submitted a discussion related to the paper author by Le and Bazant. This discussion was submitted to the Journal on May 31, 2011. At that time, the Chief Editor for *JEM* was Dr. Kaspar Willam. Dr. Willam assigned the discussion to an Associate Editor for handling on June 19, 2011.
- The AE selected Reviewer 1, who accepted the assignment on August 2, 2011. Reviewer 1 never completed the agreed review and was therefore canceled.
- Reviewer 2 was assigned on May 15, 2012 and submitted a technical review on May 29, 2012. Szamboti and Johns received the decision (declined for technical reasons) on May 31, 2012. With the decline decision, the authors received extensive comments.
- Subsequent to this decision, Szamboti and Johns submitted an appeal on June 8, 2012. The journal editorial office sent a request to separate the pieces of the submission—cover letter, discussion, and rebuttal—to adhere with formatting requirements.
- The appeal was assigned to Dr. Willam as Chief Editor on June 25, 2012. Dr. Willam and Dr. Ballarini were acting as Co-Editors for *JEM* during this time, owing in part to the delays in manuscript processing that were occurring during late 2011/early 2012 (these delays unfortunately affected the initial review of the discussion submitted by Szamboti and Johns, as described in the bullets above). In this unusual Co-Editor arrangement, Dr. Willam was handling ongoing reviews and Dr. Ballarini was to take on new submissions.
- Dr. Willam mistakenly assigned the appeal to Dr. Ballarini in August 2012, misidentifying it as a new submission. Dr. Ballarini assigned the appeal to an AE in September 2012.
- In January 2013, the journal editorial office was informed that the handling editor (AE) would not be handling the appeal. The AE assignment was rescinded when Dr. Ballarini discovered that this was related to a prior decision and therefore should remain with Dr. Willam per the terms of the Co-Editor arrangement.
- In February 2013, the journal editorial office requested that Dr. Willam make an expedient decision, as we were receiving regular requests from the authors for an update. Dr. Willam rendered a decision on the appeal in August 2013. The letter advised the authors that there had been a review and the Co-Editors were standing by the technical comments of the original reviewer and the original decision. The decision letter was written as a courtesy under the authority of both Co-Editors, although the initial decision pre-dated the Co-Editor arrangement and was rendered by Dr. Willam.

- Subsequent to the decline of the appeal, Szamboti and Johns appealed the decision to the Engineering Mechanics Institute of ASCE. In September 2013, EMI informed the authors that their appeal to the Institute was declined. The letter from EMI explained that they were aware that there had been unintentional delays in the review of the discussion (specifically, between the assignment to/termination of Reviewer 1 and the assignment to Reviewer 2), but that the Institute stood by the technical review and original decision.
- *Clarification on the context to consider the submission out of scope if it was originally sent for review, and given that it is a response to a publication in scope for the journal.*
- The decline decision letter stated that the Co-Editors conducted a careful review of the original discussion, the review that recommended the discussion be declined, and the authors' rebuttal to the review. Following such review, the Editors stood by the initial decision and stated that *JEM* is not a forensics journal and therefore is not an appropriate forum for ongoing forensic debate associated with a specific case study (in this case, the collapse of the World Trade Center towers).
- Further, since Dr. Ballarini became Chief Editor for *JEM*, his decision has been not to send out for review future papers dealing with the World Trade Center collapse, in keeping with his position that *JEM* is not an appropriate forum for back-and-forth forensic debate. This policy has been consistently upheld during Dr. Ballarini's tenure as Chief Editor.
- *Information on any steps taken by the journal and publisher to look into the concerns about a potential competing interest on the part of the editor.*
- As described above, the decision on the original paper by Le and Bazant was made by Dr. Corotis, who is no longer Editor of *JEM*. The initial decline decision on the discussion by Szamboti and Johns was rendered by Dr. Willam, who is no longer Editor of *JEM*. Dr. Ballarini's involvement in this matter extends only so far as having assigned Szamboti and Johns' appeal to an AE, although the final decision was rendered by Dr. Willam on behalf of the Co-Editors.
- Dr. Ballarini has disclosed to the journal editorial office/publisher that Dr. Bazant was on the faculty at Northwestern University when he was a graduate student there. Dr. Ballarini did not take a course with him nor author any papers with him. Their collaboration is simply as colleagues in the general area of structures/mechanics.
- Further, Dr. Ballarini has disclosed that he and Dr. Le were colleagues at the University of Minnesota, and have published papers together.
- Relationships as described above are quite common within an academic community, particularly within a relatively niche community such as the one that *JEM* serves. ASCE's expectation of its Editors is that they will give unbiased consideration to all manuscripts despite any such relationships, as described in the final section below. Further, Dr. Ballarini did not participate in any review or decisions related to the paper by Le and Bazant.

- *Information on the policies and processes in place at the journal to handle responses or critiques to published articles.*
- These policies are detailed in “*Publishing in ASCE Journals: A Guide for Authors*”
 - Details about Discussions and Closures, which present and respond to significant comments or questions about the technical content of a technical paper, technical note, or case study published in an ASCE journal are covered in Chapter 1: <https://ascelibrary.org/doi/10.1061/9780784479018.ch01>
 - Policies related to the appeal of review decisions are covered in Chapter 4: <https://ascelibrary.org/doi/10.1061/9780784479018.ch04>

- *Information on the policies and processes in place at the journal to handle concerns about potential competing interests by editors.*
- Obligations of ASCE Editors are detailed in “*Publishing in ASCE Journals: A Guide for Authors*”
 - In particular, the author guide states that “An editor shall give unbiased consideration to all manuscripts offered for publication and shall judge each on its merits **without regard to any personal relationship or familiarity with the author(s)...**”
- Further to this, Dr. Ballarini has chosen to structure his Editorial Board such that he does not handle submissions beyond initial screening. After the initial screening, for papers that Dr. Ballarini deems worth of review, he immediately assigns the submission to an AE, who then sends the paper to reviewers, receives the reviews, and makes a decision. Dr. Ballarini gets involved with papers that involve issues such as plagiarism, fragmentation of research, and so forth. Such a structure further mitigates any conflict Dr. Ballarini may have given the breadth of colleagues with whom he works around the world.

Please let me know if you have any follow-up questions or concerns and I will try to address them for you.

Member’s response following COPE’s request for clarification regarding processes for handling competing interests

Thank you for your follow up questions. Please find our responses below:

1. We understand that as part of the items raised by Dr Johns, concerns were noted about potential competing interests on the part of the editors involved in the handling of his submission and appeal. We would be grateful if you could provide an outline of any potential competing interests for all editors involved in the handling of Dr Johns’ submissions and appeal.

Potential competing interests for Dr. Willam and Dr. Ballarini are listed below. I do not have competing interest information for Dr. Corotis, who rendered the final decision on the Le/Bazant paper. Please note

that the Szamboti/Johns appeal was additionally reviewed and voted on by the eight-member Board of Governors for the Engineering Mechanics Institute (EMI), which is a technical division of ASCE charged with oversight of the Journal of Engineering Mechanics. The list below includes any potential interests between 2005 (5 years prior to submission of the Le/Bazant paper) and 2014 (following decline of Szamboti/Johns appeal):

Dr. Willam:

- No competing interests during this timeframe.
- Dr. Willam was awarded a contract in June 2003 (7 years prior to the submission of the Le/Bazant paper on which Dr. Corotis rendered a final decision and 8 years prior to the submission of the Szamboti/Johns Discussion) to provide technical expertise for the NIST Final Report on the Collapse of the World Trade Center Towers.

Dr. Ballarini:

- Professional affiliations:
 - Dr. Ballarini was a graduate student at Northwestern University from 1980-1985. During this time, Dr. Bazant was a professor at Northwestern. Ballarini did not take any courses with Bazant, nor publish any papers with him, nor work on a funded research project. Since 1985, they have a collegial professional relationship in which they speak to each other at conferences and workshops in the area of mechanics and structures.
 - Dr. Ballarini and Dr. Le were colleagues in the same department at the University of Minnesota from September 2010 through July 2014. During the timeframe that includes a few years before the submission of the manuscript in question until June 2013 (as detailed below), they did not co-author any papers nor have any mutual funding. However, starting in 2013 (as detailed below), they did initiate a collaboration that continues through today, and which lead to the co-publications listed below. Dr. Le was nominated the EMI Board of Governors to become an Associate Editor (AE) for JEM in 2016. The Board of Governors unanimously approved his nomination based on his expertise in concrete materials and structures, and he was appointed to an AE role in 2016.
- Co-publications:
 - Mello, Ballarini, Le, (2020) "Numerical Modeling of Delayed Progressive Collapse of Reinforced Concrete Structures," *ASCE Journal of Engineering Mechanics*, ASCE, 146(10): 04020113.
 - Xu, Ballarini, Le (2019) "A Renewal Weakest-Link Model of Strength Distribution of Polycrystalline Silicon MEMS Structures," *Journal of Applied Mechanics of the ASME*, 86(8): 081005.
 - Le, Ballarini, Zhu (2015) "Modeling of Probabilistic Failure of Polycrystalline Silicon MEMS Structures," *Journal of the American Ceramic Society*, 98(6), 1685-1697.

- Le, Pieuchot, Ballarini (2014) “Effect of stress singularity magnitude on scaling of strength of quasibrittle structures”, *Journal of Engineering Mechanics*, ASCE, 140(5): 04014011.
- Le, Pieuchot, Ballarini (2013) “Effect of stress singularities on scaling of quasibrittle fracture.” *Proceedings of the 13th International Conference of Fracture*, Beijing, China, June 2013.
- Conference presentation:
 - Le and Ballarini (2013) “A finite weakest link model of failure statistics of polycrystalline silicon MEMS devices.” *Proceedings of ASME International Mechanical Engineering Congress and Exposition*, San Diego, CA, November 2013.
- Mutual funding: National Science Foundation, (2014-2017) This was joint research on reliability of microelectromechanical systems made of silicon.

2. Can you please clarify whether the journal has a process to recuse editors who have competing interests with submissions from the handling of those manuscripts, and if that process is not in place, confirm what steps the journal will take to implement such a process?

Yes. For all ASCE Journals, Editors are asked to contact the editorial office when they have competing interests with any authors on incoming submissions. In those situations, the editorial staff blinds the Editor from the submission in the peer review system. The Editor must provide direction as to which AE should handle the submission in his or her stead. The editorial staff adds a note to the submission with the recusal and the handling Editor’s name in the peer review system, and assigns the submission appropriately. The AE renders a final decision on the paper with no involvement from the Chief Editor.

If a Discussion is subsequently submitted in response to such a paper, the editorial staff would link the Discussion to the original paper, and refer to the note in the system regarding the Chief Editor’s recusal from the original submission. The Discussion would therefore also not be handled by the Chief Editor.

Specific to JEM, as described in the previous reply, since becoming Editor, Dr. Ballarini has chosen to structure his Editorial Board such that he does not handle submissions beyond initial screening. In the initial screening, Dr. Ballarini assesses papers to determine, based on the topic, which AEs have the expertise and associated reviewer base. After the initial screening, for papers that Dr. Ballarini deems worth of review, he immediately assigns the submission to one of these AEs, who then sends the paper to reviewers. The AEs receive the reviews and make the final decision. Dr. Ballarini gets involved only with papers that involve issues such as plagiarism, fragmentation of research, and so forth. Very rarely—only when AEs in the topic area are handling too many papers—Dr. Ballarini may send a paper out to reviewers himself. Such a structure further mitigates any conflict, real or perceived, that Dr. Ballarini may have given the breadth of colleagues with whom he works around the world. This process has also reduced time to first decision for JEM to three months.

Please let me know if you have any remaining questions.

Member's response following request from COPE for journal to address steps where Chief editor is involved as part of their processes for competing interests

Please see our responses below in green. I look forward to hearing further.

- You indicate that the journal has a process where editors who have potential competing interests are blinded from the review process. It is however unclear how any potential competing interests on the part of the Chief Editor are managed, as you indicate the Chief Editor would still be involved in the initial screening of submissions and the assignment to an editor. Could you please provide further clarification on how situations where the Chief Editor has a potential competing interest are handled?

I may be misunderstanding your question. The Chief Editor is **NOT** involved in initial screening of submissions for which s/he has a competing interest. We do rely on our Chief Editors to alert us to a competing interest, which they regularly and reliably do. When a Chief Editor alerts us of a competing interest, the editorial staff immediately blinds the Chief Editor to the submission. The Chief Editor does let the staff know which Associate Editor has the most appropriate expertise to handle the submission in his/her stead. As our editorial staff members do not have engineering backgrounds, they cannot make a determination as to who should act as handling Editor in the Chief Editor's place. The submission is assigned to that AE by the editorial staff, and the AE then handles the initial screening and all tasks moving forward that the Chief Editor would ordinarily handle, including rendering a decision. To make sure we are abundantly clear on this point: When a Chief Editor does **NOT** have a competing interest, his/her initial screening includes a review of the content and a decision to move the submission forward for review, and if so to which AE, or to render a quick reject without review. When a Chief Editor **DOES** have a competing interest, his/her initial screening serves **ONLY** to identify a suitable AE.

- In the case of Dr Johns' submission, it appears that a perceived competing interest may arise in relation to the Chief Editor's prior relationship with one of the authors of the publication that Dr Johns' submission is critiquing. As noted in earlier correspondence, the expectation per COPE guidelines would have been for Dr Ballarini to be recused from the editorial evaluation and decision for the manuscript. Could you please comment on this, and clarify what steps the journal took, or will take, to address this concern?

Again, per our earlier replies, Dr. Ballarini was not involved in handing the discussion, nor rendering a final decision. Dr. Willam was the handling Editor for the discussion as described below. The review, in retrospect, should have been written in clearer language that made clear which co-Editor took responsibility for the decision. To address this concern, ASCE now strongly discourages any co-Editor arrangements and, in the case where this is unavoidable, we require one Editor to take ultimate responsibility for rendering each of his/her final decisions (i.e., no "cosigning" of reviews as a formality). In the case of the Szamboti/Johns discussion, Dr. Ballarini became involved when the authors communicated directly with him to inquire about the status. As described in our earlier replies, the

Journal was experiencing significant delays at the time, which eventually resulted in a new Editor appointment. Dr. Ballarini indicated to the authors at the time that he would urge Dr. Willam to expedite a decision, understanding that the tardiness in handling was unacceptable and not fair to the authors. This was the extent of Dr. Ballarini's involvement.

In consideration of the items above, we would also recommend that the journal reviews and updates its editorial policies around competing interests, to provide further clarity on what situations are deemed as constituting a competing interest (real or perceived) and that you consider incorporating a time element to the policies to clarify what timeframe applies when considering situations falling within the competing interests policy. Thank you for your suggestion. Upon resolution of this issue, and when we next update our Author Instructions, we will review our editorial policies re: competing interests.

[Member's response following review by second subcommittee member and further request for clarifications by subcommittee](#)

Thank you for your note and additional questions. Please see ASCE's responses below.

- Dr Johns and Dr Szamboti's submission discussed concerns, which they described to us as 'straightforward and fatal errors', about an earlier publication in the journal by Le and Bazant. COPE advises editors to follow up on concerns raised about publications in their journal, could you clarify whether the *Journal of Engineering Mechanics* pursued a review of the issues raised about the publication by Le and Bazant? If such an evaluation was pursued, we would be grateful if you could provide details on the process followed to complete the assessment; if the evaluation was not pursued, could you please comment on the context that led to a decision not to look into the issues raised.

Drs Johns and Szamboti submitted a Discussion related to the publication by Drs Le and Bazant in May 2011. As described in ASCE's original response to COPE's inquiry, that Discussion went through a technical review, and Drs Johns and Szamboti received a decline decision, rendered by Dr. Willam, in May 2012. This decision was a decline ***for technical reasons.*** That is, the reviewer found substantial technical issue with Dr Johns' and Szamboti's Discussion submission, and extensive comments were provided to the authors with the decline decision.

To be clear, the Le and Bazant paper has been subject to post-publication scrutiny, as another related Discussion was submitted by a different author, also in 2011, and published in 2012. That Discussion can be found here:<https://ascelibrary.org/doi/10.1061/%28ASCE%29EM.1943-7889.0000325>. In both cases, the Editor, Associate Editors, and reviewers involved (a) assessed the technical merit of the Discussions and (b) evaluated the concerns presented with regard to the Le and Bazant paper within the context of the technical merit of the Discussion.

- Dr Johns and Dr Szamboti's second submission to the journal was rejected as out of scope. In your earlier responses you indicated that this was due to a change in editorial scope where the Editor-in-Chief had established that the journal would no longer consider submissions related to the World Trade Center. Could you please confirm the date at which this change in editorial policy regarding the journal's scope took place, and whether this change in scope was documented publicly?

To be clear, Drs Johns and Szamboti did ***not*** submit a second submission to the journal. Rather, in June 2012, they appealed the decline decision on the original Discussion.

The Editor declined the appeal in August 2013. The decline letter advised the authors that the Editor conducted a careful review of the original Discussion, the technical review that recommended the Discussion be declined, and the authors' rebuttal to the review. Following such review, the Editor stood by the initial decision. The letter further stated that *JEM* is not a forensics journal and therefore is not an appropriate forum for ongoing forensic debate associated with a specific case study (in this case, the collapse of the World Trade Center towers). As explained in ASCE's original response to COPE's inquiry, the decision letter on the appeal was written as a courtesy under the authority of both co-Editors.

This is not a matter of change in editorial scope, but rather upholding on appeal the decision of the original technical review. Further, since Dr Ballarini has taken the helm as sole Editor of *JEM*, he has held fast to the philosophy that *JEM* is not an appropriate forum for back-and-forth forensic debate but rather is a journal for fundamental contributions to engineering mechanics. As such, he has chosen not to consider submissions on this topic. However, that was not the reason for the decline of the appeal—the appeal was declined because, after further review, the Editor upheld the technical decision on the initial submission.

COPE's review

A member of the Facilitation & Integrity subcommittee reviewed the case. Upon review of the information the presenter submitted the case was deemed to fall within the scope of the Facilitation & Integrity process.

COPE approached the *Journal of Engineering Mechanics* for comments on the concerns raised by the presenter. The journal provided a detailed timeline of the handling of the submissions and clarified that the rejection of the resubmission was handled by Dr Willam as Chief Editor and not by Dr Ballarini, the journal also provided information on the competing interests policies at the journal.

The Facilitation & Integrity subcommittee followed up with the journal to request further clarification regarding competing interests in the history of the manuscript and the processes in place at the journal to manage any potential competing interests that arise. The journal provided the potential competing interests information as well as details on the processes in place at the journal to address competing interests if/when they arise.

The subcommittee followed up with the journal to indicate the processes for competing interests should also address potential competing interests by the Chief Editor and their role in the initial screening of submissions and recommended that the journal reviews and updates its editorial policies around competing interests, to provide further clarity on what situations are deemed as constituting a competing interest as part of the information provided on the journal's website. The journal replied indicating that if they had a competing interest, the Chief Editor was only involved in assignment to an editor and confirmed the journal would be reviewing and updating its public information on competing interests.

The Facilitation & Integrity subcommittee advised that if a competing interest is identified regarding the Chief Editor, this editor should be recused from all steps in the editorial process for the manuscript, and recommended that the journal updates its process to ensure that in those situations the Chief Editor is not involved in the identification of the editor who would handle the manuscript. Following recommendations from COPE on how to address this process change, the journal confirmed they would implement the change to their process.

The Facilitation & Integrity subcommittee closed the case indicating that the journal had followed an adequate process but recommended it reviewed and strengthened its competing interests policies.

The presenter responded to this notification requesting the subcommittee extend its review as they felt there had been competing interests by the editor in the handling of the manuscript, and that the 'out of scope' decision for the submission was procedural in nature. In light of these remaining concerns, the Facilitation & Integrity subcommittee asked another independent subcommittee member to review the matter.

Following this further review, the subcommittee approached the journal to request clarification on two additional items: whether the *Journal of Engineering Mechanics* pursued a review of the concerns about the publication by Le and Bazant outlined in Dr Johns and Dr Szamboti's submission, and clarification about the change in editorial policy regarding the fact that they would no longer consider submissions related to the World Trade Center.

The journal indicated that they had considered the concerns about the publication by Le and Bazant and decided that no post-publication action was necessary for that article. The journal also indicated that the revised manuscript by Dr Johns and Dr Szamboti was not considered a second submission but an appeal on the original submission, and that the decision on the appeal was reached based on a confirmation of the original technical concerns with the submission and not due to a change in editorial scope.

The Facilitation & Integrity subcommittee reviewed the information provided by the journal and considered it provided adequate procedural information in response to the items raised.

Conclusions

Upon consideration of the concerns and the member's response, the Facilitation & Integrity subcommittee considers that the journal followed an adequate process to handle the concerns raised

about the handling of the submission. The journal undertook a review of the submission history and of potential competing interests on the part of the editors, and confirmed that the Chief Editor with potential competing interests did not handle the decision for rejection.

With regard to the processes in place for competing interests, upon COPE's request for further steps to manage potential competing interests by the Chief Editor, the journal agreed to make changes to its processes to address this, and also confirmed it would review its policies around competing interests.

The Facilitation & Integrity subcommittee views the decision on whether to publish Dr Johns' manuscript within the remit of editorial decision making, which falls beyond what COPE can review as part of the COPE Facilitation & Integrity process.

In this case, the Facilitation & Integrity subcommittee considers that the journal followed an adequate process. However, we put forward two recommendations for the journal, as outlined above:

- Complete the update to the journal processes to recuse the Chief Editor from the initial screening and editor assignment if there is a competing interest on the part of the Chief Editor.
- Complete the review and update to the journal's competing interests policies to ensure the situations that fall within the framework for competing interests and how the journal would manage those is clear to readers on the journal's website.

Upon its further review of the matter, the subcommittee considers that the journal followed an adequate process to handle the appeal by Dr Johns and Dr Szamboti in relation to their submission, and to review the concerns raised about the publication by Le and Bazant and inform the decision that no post-publication action was necessary for that article. However, we make the following recommendations to strengthen the journal's policies and practices, in addition to those previously outlined regarding the competing interests process and policies:

- We recommend the journal reviews its process for editorial decisions to ensure that the letters for authors are as clear as possible in the future, particularly regarding decisions for rejection.
- We recommend that the information regarding submissions that will not be considered by the journal (e.g. those pertaining to the World Trade Center) is included in the journal's Information for authors page, so that the information is clear for any future contributors.

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