

1 Discussion of “Toward Error Management in Construction: Moving beyond a Zero Vision” by
2 Peter E.D. Love and Jim Smith (DOI: 10.1061/(ASCE)CO.1943-7862.0001170)

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4 While advocating for new thinking about error management in construction, Love and Smith
5 (2016 p. 2) state “Calls by the lean construction movement, for example, to achieve zero defects,
6 demonstrate an explicit emphasis being placed on error prevention to ensure avoidance of errors
7 (e.g., Nesensohn et al. 2013). It is perplexing, however, why lean construction still advocates for
8 the attainment of zero defects despite the long established negative connotations that have
9 resided with the use of this slogan, especially when many of its principles are derived from the
10 concept of quality. The forbearer of the quality movement W. Edward Deming explicitly.”

11 Regrettably, Love and Smith’s understanding of lean construction is wrong. The International
12 Group for Lean Construction (www.iglc.net) has been in existence since 1993. Its members have
13 been reporting at the IGLC Annual Conferences and in publications such as the Lean
14 Construction Journal (www.leanconstructionjournal.org/) and many main stream journals
15 (including ASCE’s) on lean principles and practices as they apply to the construction industry. It
16 is unclear why Love and Smith singled out the Nesensohn et al. (op. cit.) reference, which is only
17 a few years old, as the best reference to cite regarding the lean construction view on zero defects.

18 A readily-available source document that stands out in the lean literature as a reference to zero
19 defects is Shigeo Shingo’s (1986) book “Zero Quality Control: Source Inspection and the Poka-

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20 yoke System.” The back cover of that book reads: “Defects = 0 is absolutely possible!” As a lean
21 scholar and practitioner, the writer shares Shingo’s vision.

22 Norman Bodek cautioned in the publisher’s preface of that book (op. cit. p. vi): “As you read the
23 text of this brilliant book you will see the amazing simplicity of Mr. Shingo’s thinking. It is so
24 simple that you wonder at times what it is that is so new. But do not be misled. I caution you to
25 read slowly and allow the totality of his ideas to penetrate deeply within you. Don’t allow the
26 simplicity to fool you.”

27 It is unclear whether or not Love and Smith have searched the literature to find and read this
28 source document on zero defects; however, it is clear that they have failed to understand the
29 distinction Shingo makes between errors and defects.

30 Love and Smith challenge the notion of “error prevention (i.e., errors can be and should be
31 prevented)” and counter-pose “error management (i.e., errors happen)” as if it were something
32 new. The concept of error management is at least 30 years old. In fact, Shingo (op. cit. p. 82)
33 clearly stated: “I claim that it is impossible to eliminate all errors from any task performed by
34 humans. Indeed, inadvertent errors are both possible and inevitable. Yet errors will not turn into
35 defects if feedback and action take place at the error stage. In this way, I am advocating the
36 elimination of defects by clearly distinguishing between errors and defects, i.e., between causes
37 and effects.” Indeed, Shingo advocated for error management.

38 Love and Smith conclude “if the construction industry is to gain traction in the pursuit of
39 productivity and performance improvements, then greater emphasis needs to be placed on
40 developing a learning culture that is able to transform error events into experiences.” The writer
41 could not agree more.

42 Especially for scholarly work, a learning culture also includes thoroughly searching for and
43 citing past work. The literature on lean construction and on lean in general is substantial and
44 growing steadily. Given the lean community's focus on developing people and urging them to be
45 relentless learners, its literature includes significant work on learning, leading, and coaching
46 (e.g., Shook 2008, Rother 2009). Construction scholars and practitioners can benefit from
47 consulting that literature and building on it, so as to avoid reinventing the wheel.

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49 References

50 Nesensohn, C., Demir, S.T., and Bryde, D.J. (2013). "Developing the True North route map as a
51 navigational compass in a construction project management organization." *Lean Constr. J.*, 1-18.

52 Rother, M. (2009). *Toyota Kata: Managing People for Improvement, Adaptiveness and Superior*
53 *Results*. McGraw-Hill Education, 306 pp.

54 Shingo, S. (1985). *Zero Quality Control: Source Inspection and the Poka-yoke System*.
55 Productivity Press, Cambridge, MA, 303 pp.

56 Shook, J. (2008). *Managing to Learn: Using the A3 Management Process*. Lean Enterprise
57 Institute, 138 pp.