
Journal of the

National

Academy OF

Forensic

Engineers[®]



<http://www.nafe.org>
ISSN: 2379-3252

Vol. XXVI No. 1 June 2009

COMMENTARY ON

Children Falling Through Windows/Guardrails

by Norm Cooper, P.E. (NAFE 418F)

Volume XXV, Number 2. December 2008

COMMENTARY PREPARED BY

Jeffrey D. Armstrong, P.E. (NAFE 644S)

Having read and reviewed the referenced technical paper in the most recent edition of the *Journal of the National Academy of Forensic Engineers* ("The Journal"), I respectfully submit the following commentary. The referenced paper cites the following two previously published papers by the same author as support for many of opinions:

1. Cooper, Norm. "Forensic Engineering Report: Causes of Mold in Buildings." *Journal of the National Academy of Forensic Engineers*. Volume XXIII, Number 1. June 2006.
2. Cooper, Norm. "Forensic Engineering Investigations of Guards, Handrails, and Stairs." *Journal of the National Academy of Forensic Engineers*. Volume XXI, Number 1. June 2004.

While this Commentary specifically addresses the paper "Children Falling Through Windows / Guardrails," many of the issues discussed in this Commentary are common to all three papers. All three papers include the author's interpretations of current building codes, and it is with respect to those interpretations that I offer this commentary.

No Grandfathering, Unsafe Structures, and Most Restrictive Governs

The author suggests that the *International Building Code* and its predecessors do not allow "grandfathering" where safety is involved. The author states, "...the current code, not any previous code, defines what is unsafe in all new and existing residential and other construction. However, the cited purpose does not require action on existing structures. The unsafe structures section cited below does require action on existing structures."

The paper asserts that any safety-related feature of a building that does not comply with the current Building Code is unsafe, even if it complied with the Code that was in place at the time of permitting and construction. Using this logic, one could argue that all requirements of the Building Code are related to

safety. The reality is that while Building Codes do evolve and change, it does not mean that buildings and structures constructed under previous versions of the Code are unsafe. It is widely recognized in the Engineering and Building community that it would place an unreasonable and impossible burden on owners to require that existing buildings be retrofitted to the new Code every time a new version of the Code is published (typically every three years). Using this logic, one could argue that any building constructed today is unsafe because at some point in the future, the Code will change, and many features of the building that are related to safety will not be in compliance with those future Codes.

The *International Building Code* anticipates this issue in its “Existing Buildings” section. It states in part, “*Any existing building which complied with the code in effect at the date of issuance of the permit shall be permitted to continue in its approved occupancy group. Such continued approval shall not be construed to prohibit the inspection authority from at any time requiring that the minimum standards of safety be maintained during the period of use of the building in accordance with the building code in effect on the date of issuance of the permit. Such standards include, but are not limited to, strength, egress, fire resistance, openings in walls, electrical, plumbing, mechanical or elevator equipment or fire extinguishing apparatus.*” (Emphasis added).

In the Section of the paper under the heading “Most Restrictive Governs,” the author quotes the Code as saying, “*Where, in any specific case, different sections of this code specify different... requirements, the most restrictive shall govern.*” The author then opines, “*Because the most restrictive code governs, unsafe is defined by current code, not by any grandfathered code, not by opinion of an engineer, building official, or anyone else.*” It is my opinion that the author misinterprets the language of the Code where it says “*... different sections of this code (emphasis added) specify different... requirements.*” It appears that the author’s interpretation of this statement might more correctly read, “*...different sections of any previous edition of the code...*”

One could easily argue that strength, egress, fire resistance, openings in walls, electrical, plumbing, mechanical or elevator equipment or fire extinguishing apparatus are all safety-related features of any building. Yet the Code clearly indicates that they must be maintained “*in accordance with the building code in effect on the date of issuance of the permit.*” (Emphasis added).

The author’s logic that buildings and structures that complied with Building Codes when they were constructed, but do not comply with current Codes are rendered unsafe is an opinion that I have never before observed anywhere within the engineering and building community.

Others Responsible

This section of the paper contains a statement that says, “*Grandfathering unsafe construction so it can potentially or actually continue to kill or injure is not only contrary to the building code as cited above, but is contrary to the primary purpose, safety, of statutes governing professional engineering, architecture, etc.*” Such a statement appears to have the intent to incite emotions, and is in conflict with statements the author makes in the section “Advocacy.”

Outcomes

In this section the author attempts to validate his interpretations of the Codes by citing two previous papers which he authored that have been published in *The Journal*, and by citing the number of cases where he has expressed such opinions. He also attempts to quantify the number of times his clients have “won” when he has rendered opinions based on such interpretations. The fact that the author has published this interpretation of the Codes in previous editions of *The Journal* does not necessarily provide support for his opinion. The author’s belief that this interpretation has never been challenged on any of his cases does not provide support for his opinion.

Advocacy

This section describes how a forensic engineer should approach any case. The author states, “*To be advocates for the truth, forensic engineers should apply the code as adopted and applicable, not as they feel the code should read, not as they feel a court may rule because it may legislate from the bench... Facts, not feelings, should prevail.*” Such a statement is contradicted by the author when he states in his paper, “*Grandfathering unsafe construction so it can potentially or actually continue to kill or injure...*” which appears to be an attempt to invoke feelings, and is not based on facts.

Conclusions/Recommendations

The author states, “*Even though this “no grandfathering” position is rarely enforced by government (or by insurance companies), the ethical/moral responsibility and liability risks to owners may be high if owners do not bring safety elements of all their structures to current code.*” This commentary has detailed why the Code places no such unreasonable requirement on building owners, and why the non-compliance with current codes does not necessarily render a building unsafe.

This section goes on to say, “*Code enforcement and upcoming code revisions at all levels should include reducing any uncertainty that safety items (at least the low cost to fix items such as windows and guardrails) must be brought to current code on at least existing buildings with three or more family dwellings so they do not continue to injure and kill children.*” It seems as though the author

is acknowledging that the Code does not actually say what he implies with this statement. And again, including the statement, “...so they do not continue to injure and kill children” is an example where the author contradicts his own statements by invoking feelings rather than presenting facts.

COMMENTARY PREPARED BY

Richard A. Rice, P.E. (*NAFE 578S*)

As a Licensed Professional Engineer and a Certified Building Inspector through the International Building Code Council (IBCC), I find the conclusions and opinions of Norman Cooper’s NAFE 2008 paper unacceptable. The author’s opinions would overturn over half a century of code interpretation, code administration, and code implementation by sequencing several selected sections of codes together to justify the author’s conclusions.

If one sentence exemplifies this theme, it is this: “Therefore, the current code, not any previous code, defines what is unsafe in all new and existing residential and other construction.” The author’s opinions are contrary to the established policy of numerous cities, counties and states with regards to renovating existing buildings. Typically, when the renovation cost is equal or greater than 50% of the value of the existing structure, the existing structure is required to be brought up to current code standards. It is the Building Official who decides the scope of work and what is considered “unsafe construction” to be changed. Millions of dollars have been spent over the past decades to administer such policies. Duly appointed and credentialed Building Officials all over the United States are relied upon to implement such policies. The author indicates that only the current code dominates, and thus preempts the powers of the Building Officials.

To take this opinion to its logical conclusion, an existing building must be brought up to the “current” code every three years when new codes are customarily published, and the Building Official would have no say as to what is considered “unsafe” because only the new (i.e. current) code would define what is unsafe. Building owners would have to spend large expenditures of money every three years because EVERY change in the current code could be potentially interpreted as a safety issue requiring changes. In my opinion, the author’s conclusions are contrary to decades of evolving codes and code interpretation, and contrary to the opinions of this commentator who is a Licensed Professional Engineer and Certified Building Inspector through the IBCC.

AUTHOR'S CLOSURE

by Norm Cooper, P.E. (*NAFE 418F*)

General Response

The main point of the comments of Jeffrey D. Armstrong, P.E. and Richard A. Rice, P.E. on the author's December 2008 NAFE Journal report is that there is precedent to grandfather to construction date all building code requirements. This is true. Mr. Armstrong and Mr. Rice apparently missed the author's acknowledgement of this truth at the beginning (p.63) and again at the end (p.71) of the author's journal report "Children Falling Through Windows/Guardrails".

But Mr. Armstrong and Mr. Rice do not acknowledge that precedent can be different from law: the building code adopted into law by state or local governments. Instead they misinterpret and unilaterally attempt to rewrite the law to defend the precedent. Mr. Armstrong and Mr. Rice provide no evidence using code wording (IBC¹, IRC², etc) to refute the plain language of the codes (e.g. IBC: 101.3, 116.1, 102.1 and preceding codes) that override grandfathering when safety is involved, as set forth (with exceptions) in the author's December 2008 Journal report. By advocating this unsafe precedent over law, the comments of Mr. Armstrong and Mr. Rice are in conflict with the first fundamental "canon" of engineering codes of ethics that requires safety to be "paramount"³. Their comments also conflict with the "rule of law"⁴.

Specific Response

Mr. Armstrong writes that his commentary is on the "author's interpretations of current building codes". The author's paper has applied⁵ the plain language of the codes and has not interpreted⁶ the codes. To defend precedent over law, Mr. Armstrong & Mr. Rice have misinterpreted the plain language of the codes and they have tried to rewrite the codes. The codes (IBC 102.1, IRC 102.1) state "Where in any specific case, different sections of this code specify different...requirements, the most restrictive shall govern." But Armstrong unilaterally rewrites "this code" from the foregoing code sentence as "any previous editions of the code" to justify precedent over law. Rice unilaterally rewrites the code to add "when the renovation cost is equal or greater than 50%...required to be brought to existing standards," which does not exist in IBC or IRC, and was removed from preceding codes many years ago.

Mr. Armstrong writes "The paper asserts that any safety-related feature of a building that does not comply with the current Building Code is unsafe..." Nowhere does the author's paper say this. The author's paper cites several

exceptions. If Mr. Armstrong had said “many” instead of “any” he would have been correct.

Mr. Armstrong correctly quotes the author: “Grandfathering unsafe construction so it can potentially or actually continue to kill or injure is not only contrary to the building code as cited above, but is contrary to the primary purpose, safety, of statutes governing professional engineering, architecture, etc.” Mr. Armstrong writes “Such a statement appears to have the intent to incite emotions, and in conflict with statements the author makes in this section ‘Advocacy.’” The plain language of the codes that override grandfathering and the state statutes requiring engineers to give high priority to safety are law, not emotional advocacy. The numbers of injuries and deaths cited by the author are quotes of authoritative estimates, not emotional advocacy. The author’s paper is consistent (not in conflict) with the papers statement that forensic engineers should be advocates for truth: the plain language of the law. But the comments of Mr. Armstrong and Mr. Rice advocate unsafe precedent that is contrary to law.

Mr. Armstrong says the author “...attempts to quantify the number of times his clients have ‘won’ when he has rendered opinions based on such interpretations. The author’s belief that his interpretation has never been challenged on any of his cases does not provide support for his opinion.” These statements are not in the author’s paper. The word “won” is not in the author’s paper. The author’s paper nowhere says “never been challenged”. In fact Appendix III of the author’s paper titled “Owner Required to keep Safety to Current Building Code” has been challenged many times, but never overturned by a court.

Mr. Rice misinterprets the code when he writes: “It is the building official who decides the scope of work and what is considered ‘Unsafe construction’ to be changed.” Here Mr. Rice advocates violating actual code wording: “The building official shall have the authority to render interpretations of this code and to adopt policies and procedures in order to clarify the application of its provisions. Such interpretations, policies, and procedures shall be in compliance with the intent and purpose of this code. Such policies and procedures shall not have the effect of waiving requirements specifically provided for in this code.” (IBC*104.1, IRC*104.1). This plain code language assures that the building official has no authority to change “this code” to mean any other code and has no authority to rewrite the code or to grandfather contrary to law.

Mr. Armstrong and Mr. Rice frequently express concern that without grandfathering on safety, there would be high monetary compliance cost. But they do not acknowledge that with grandfathering on safety there are high injury and death costs. The author’s paper suggests a compromise that could reduce this conflict: “Code enforcement and upcoming code revisions at all levels should

include reducing any uncertainty that safety items (at least the low cost to fix items such as windows and guardrails) must be brought to current code... so they do not continue to injure and kill children.”

Conclusion

Without such misinterpretation or rewriting, the comments of Mr. Armstrong and Mr. Rice do not refute the plain language of the codes that (with exceptions stated in Appendix III of the author’s paper) overrides grandfathering on safety. But in this inability, they are in good company: None of the many lawyers or opposing expert witnesses in the authors cases have been able to refute the plain language of the code wording that overrides grandfathering on safety. This is also true of responses received by the author from staff of the organizations that write the building codes and the accessibility codes.

References

1. International Building Code, 2009 and its earlier editions and preceding codes.
2. International Residential Code, 2009 and its earlier editions and preceding codes.
3. American Society of Civil Engineering Code of Ethics, Fundamental Canon a., National Society of Professional Engineers Code of Ethics Fundamental Canon 1., National Academy of Forensic Engineers has adopted said NSPE Code of Ethics.
4. Blacks Law Dictionary defines “rule of law” as “Supremacy of law...The doctrine that every person is subject to the law.”
5. Blacks Law Dictionary defines “apply” as “to put to use with a particular subject matter, apply the law to the facts”
6. Blacks Law Dictionary defines “interpretation” as ‘determining what...the...law...means’, and does not include rewriting the law. Merriam Webster’s Dictionary defines “interpret” as “to explain or tell the meaning of: present in understandable terms” and does not include rewriting. This is confirmed by IBC 104.1 and IRC 104.1 quoted above.