Many Facets of Structural Failures: From Deferred Maintenance to Design Errors

by

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Failures are due to deferred maintenance as well as errors made either in the design or construction process. Deferred maintenance is either due to lack of understanding of the consequences of not proactively taking care of the structure on a routine basis or due to lack of required funds for this purpose. The errors can be due to carelessness or lack of knowledge, and sometimes the desire to maximize the profits. Failures are usually investigated by forensic engineers who are highly skilled in the application of engineering science to material behavior with the knowledge of applicable codes. Some forensic engineering projects require a sworn testimony in a deposition or in the court of law. The paper will discuss this aspect of professional engineering practice. It will also include some examples of problems related to deferred maintenance along with some cases involving structural failures from a forensic structural engineering perspective.