

INFORMATION INTEGRITY A CRITICAL FACTOR IN STRUCTURE SAFETY, SECURITY AND RELIABILITY

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Abstract: Safety, security and reliability are essential requirements for competitive construction business. Information Integrity is dependability and trustworthiness of information and is a key factor determining strategic business advantage. Its determinants are accuracy, consistency and reliability of information. Infrastructures and buildings have changed a great deal but it is the processes by which structures are designed and constructed that have changed the most. The majority of structures are still comparatively simple, but internal as well as external user aspirations are becoming increasingly local and instant. In an industry traditionally geared to work under exogenously generated alternatives and information, need - in the presence of the reality of ever-present external and internal system environmental factors - is now to continuously and locally (endogenously) generate alternatives and their information requirements. This dynamic decision-making process model is demanding informational work activities, hitherto not considered, namely, information processing for observation, storage, retrieval, verification, prediction of future states, precompiled responses and abstract reasoning, manipulation, communication, *use* and discard or storage for future *use*. And in the presence of system environmental factors all these activities assume complex and changing character besieged with uncertainty. Even one generation ago, large complex buildings were erected quickly and with very little documentation, but as a result of these new information processing demands today the whole industry is increasingly burdened with the data and information, that too fraught with uncertainty, which in the wake of information processing methods of yesterday not only tend to become ends in themselves, but also slow down the process and increase the risks of failures. These informational failures, which can now be seen as an increasing problem as industries move from crisis to crisis call for simplification and speed. Within this framework this paper examines the process of information processing in design and construction and presents a systems design for Information Integrity, i. e. correctness requirement of information, as an approach to ensuring safety, security and reliability of structures.