

Integrated Design and Construction of Tall Buildings

by

Abbas Aminmansour, Ph.D.

Associate Professor and Chair of Structures

School of Architecture

University of Illinois at Urbana-Champaign, USA

AAmin@uiuc.edu

Abstract:

Design and construction of tall building projects is very demanding. Many of today's tall buildings often encompass distinctive architectural designs which in turn lead to complicated structural, mechanical and other systems designs. Further, they frequently require application of new technologies as well as innovative construction materials, techniques and processes.

Efficient and successful tall building design and construction can only be accomplished through integrated and collaborative work. It requires active participation of all major partners involved from the conception and planning of the project to completion of construction and on into the operation of the building. Members of the design and construction team must recognize that their particular portion of the work can not be accomplished in a vacuum and independent of what others do. Decisions made by one team member may significantly impact that of others. It is, therefore, essential that each player understands the roles, needs, expectations and limitations of others.

This paper will discuss the role of the different parties involved in the planning to operation of large building projects including the developer; architect; structural engineer; mechanical, electrical and plumbing engineer; general contractor; building managers and the like. Team work and integrated design and construction for comprehensive and efficient design will be particularly highlighted and a number of case studies of major international projects will be offered in the oral presentation. The paper should be of particular interest to engineers wanting to learn more about their role as it relates to the conceptual design, schematic design, design development, construction documents and construction phase of tall building projects.