MULTISTORY FRAME STRUCTURES

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ABSTRACT: This chapter begins by providing a clear definitions of various framing systems including braced and unbraced frames, sway and nonsway frames, independently braced frame and leaning frames. Various structural schemes for multistorey building construction are also discussed with special focus on their relative stiffness against horizontal load, the joints between beams and columns and their effects of the speed and cost of construction. The remaining sections offer advice on the general principles to be applied when preparing a structural scheme for multistory steel and composite frames. The aim is to establish several structural schemes that are practicable, sensibly economic, and functional to the changes that are likely to be encountered as the overall design develops. The chapter provides the design procedure and construction considerations that are specific to steel gravity frames, braced frames and moment resisting frames, and the design approaches to be adopted for sizing tall building frames. The potential use of steel-concrete composite materials for high-rise construction is also included. Finally, the design issues related to braced and unbraced composite frames and joints are discussed, and future directions for research are highlighted.