



Structural System Selector Guide

Multi-Story Residential Buildings

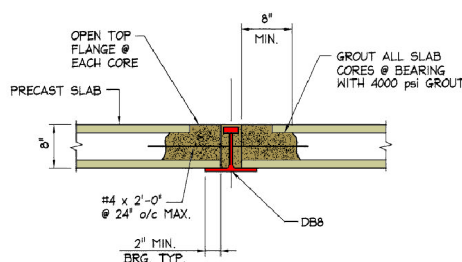
Apartments ✧ Condominiums ✧ Retirement Communities ✧
Hotels and Motels ✧ Assisted Living & Extended Care Facilities ✧
Student Housing and Dormitories ✧ Military Housing

The structural systems considered are listed below and indicate the basic structure type, floor/roof slab construction and typical span. The chart on the back is designed to guide you in the selection of a structural system according to its advantages in the Multi-Story Residential Market:

1. GIRDER-SLAB® SYSTEM: Steel, bay-framed using D-Beam® Girder, supporting 8" precast hollow core slabs. Typical bay size: 20' x 28'.
2. Staggered Truss: Steel, full height trusses (floor to floor) staggered vertically by floor, placed at demising walls, supporting 8" precast hollow core slabs. Typical bay size: 70' x 28'.
3. Steel Frame & Joists: Steel, bay-framed using bar joists, supporting metal deck and CIP concrete slabs. Typical bay size: 25' x 25'.
4. CMU Bearing Wall: Concrete masonry walls (reinforced), placed at demising walls, supporting 8" precast hollow core slabs. Typical span: 28'.
5. Flat Plate Concrete: Prestressed CIP concrete, bay framed using two way prestressed 8" CIP concrete slabs. Typical bay size: 25' x 25'.
6. CMU Walls & Joists: Concrete masonry walls (reinforced), placed at demising walls, using bar joists, supporting metal deck and CIP concrete slabs. Typical span: 25'.

GIRDER-SLAB
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Residential Structures

	Girder-Slab System	Staggard Truss & HC Slabs	Steel Frame & Joist, CIP Slabs	CMU Bearing Wall & HC Slabs	Flat Plate CIP Concrete	CMU Walls & Joist, CIP Slabs
Low Floor-to-Floor, Low Overall Building Height	●	●		●	●	
Less Risk of Schedule Over-Run due to "Winter Conditions"	●	●				
Limited Coordination of Trades (same crew for entire installation)	●	●				
Schedule – Fast Installation	●	●				
Bay Framing for Design Flexibility	●		●		●	
Limited or No Structural Demising Walls	●		●		●	
Mixed Use Spaces Below (parking, retail, office, hospitality, etc.)	●	●	●		●	
Dwelling Unit Layouts Atypical or Not Repetitive	●		●		●	
Architectural Features (balconies, bays, saw tooth, irregular, etc.)	●		●		●	
Vibration & Sound Control	●	●		●	●	
Structure Tolerances to AISC Standards	●	●	●			
Future Vertical or Horizontal Expansion	●	●	●			
Limited Quality Control Insp. & Testing Program	●	●				
Non-Combustible Construction	●	●	●	●	●	●
Economical Seismic & Wind Resistance	●	●	●		●	
Mechanical/Electrical Distribution (horiz. pipe & duct systems)	●	●		●	●	
Mechanical/Electrical Distribution at Demising Walls	●		●		●	
Economical Construction – Low Rise	●		●	●		●
Economical Construction – Mid Rise	●				●	
Economical Construction – High Rise	●	●			●	
Limited Use of Suspended Ceilings	●	●		●	●	
Design Flexibility in Location of Unit Demising Walls	●		●		●	
Workmanship (100% Factory Made Materials, Limited Assembly)	●	●				
Erect Prefabricated Exterior Walls with Superstructure	●	●				
Future interior partition & space plan modifications	●		●		●	
Limited Field Labor (formwork, cast-in-place concrete slabs)	●	●				
EPA & Energy Efficient (unpainted - recycled steel – no waste)	●					
Improved Safety Program	●	●				
Environmentally Friendly (No on-site waste, debris)	●	●				
Cost: Initial & Life Cycle	●			●		
Availability of Materials (limited delivery lead times)					●	
Availability of Labor, Size of Crews	●	●				
Site Impacts & Staging (storage, labor, scaffolding, etc.)	●					
Site Logistics & Locality, Trucking to Site (HC Slabs)			●		●	●
Limited Interior Finishing of Structural Elements	●				●	

● Denotes Advantage

□ Denotes Disadvantage