

APPLICABLE CODES AND STANDARDS:
 IBC 2009
 NFPA 101 2006, NFPA 101 2009
 MSHA DESIGN AND CONSTRUCTION MANUAL
 ICC/ANSI A117.1 2003

IBC USE & CONSTRUCTION TYPES
 GROUP S-2 PARKING GARAGE CONSTRUCTION TYPE: IB
 GROUP R-2 RESIDENTIAL CONSTRUCTION TYPE: VA

NFPA OCCUPANCY & CONSTRUCTION TYPES
 STORAGE - PARKING STRUCTURE, OPEN CONSTRUCTION TYPE: II (222)
 RESIDENTIAL - APARTMENT BUILDING, NEW CONSTRUCTION TYPE: V111

SUMMARY OF REQUIRED SEPARATIONS:
 2 HR HORIZONTAL ASSEMBLY BETWEEN STORAGE AND RESIDENTIAL OCCUPANCIES
 2 HR FIRE BARRIER SEPARATING THE MEANS OF EGRESS FOR THE UPPER OCCUPANCY AND THE PARKING OCCUPANCY
 90 MIN. SELF-CLOSING AND SELF-LATCHING DOORS TO EXIT ENCLOSURE FOR THE RESIDENTIAL OCCUPANCY FROM THE PARKING OCCUPANCY
 1 HR FIRE RESISTANCE RATING OF EXIT ENCLOSURES WITHIN RESIDENTIAL OCCUPANCY
 60 MIN. SELF-CLOSING AND SELF-LATCHING DOORS TO THE EXIT ENCLOSURE FROM THE RESIDENTIAL OCCUPANCY
 1 HR FIRE PARTITION BETWEEN DWELLING UNITS OR SLEEPING UNITS
 1 HR HORIZONTAL ASSEMBLY BETWEEN DWELLING UNITS OR SLEEPING UNITS IN THE SAME BUILDING
 1/2 HR CORRIDOR FIRE-RESISTANCE RATING
 20 MIN. SELF-CLOSING AND SELF-LATCHING DOORS TO EXIT ACCESS CORRIDOR
 1 HR FIRE RESISTANCE RATING SEPARATION AND AUTOMATIC SPRINKLERS AT BOILER ROOMS
 1 HR FIRE RESISTANCE RATING SEPARATION AND AUTOMATIC SPRINKLERS AT LAUNDRY ROOMS GREATER THAN 100 S.F. OUTSIDE OF DWELLING UNITS
 1 HR FIRE RESISTANCE RATING SEPARATION AND AUTOMATIC SPRINKLERS AT TRASH COLLECTION ROOMS
 1 HR FIRE RESISTANCE RATING PROTECTION OR AUTOMATIC SPRINKLERS AT STORAGE ROOMS OUTSIDE OF DWELLING UNITS
 1 HR SHAFT ENCLOSURES CONNECTING LESS THAN FOUR STORIES
 2 HR SHAFT ENCLOSURES CONNECTING FOUR OR MORE STORIES
 1 HR BEARING WALLS - INTERIOR AND EXTERIOR
 1 HR NON-BEARING EXTERIOR WALLS FOR WHICH THE FIRE SEPARATION DISTANCE IS GREATER THAN OR EQUAL TO 10 FEET AND LESS THAN 30 FEET.
 1 HR ROOF CONSTRUCTION AND SECONDARY MEMBERS
 1 HR FLOOR CONSTRUCTION AND SECONDARY MEMBERS

FIRE SEPARATIONS:
 - - - - - 1/2 HOUR FIRE-RESISTANCE RATING AT CORRIDORS
 - - - - - 1 HOUR FIRE-RESISTANCE RATING, STC 50 MIN.
 - - - - - 2 HOUR FIRE-RESISTANCE RATING

SPRINKLER SYSTEM:
 THE BUILDING SHALL BE EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM THAT COMPLIES WITH NFPA 13.

ALLOWABLE BUILDING HEIGHT:
 PER IBC 2009 TABLE 503 AND SECTIONS 504.2, 504.3, & 509.4

GRADE PLANE CALCULATION
 NORTH: (11.4+10.8+10.5+12.3) / 4 = 11.26
 SOUTH: (13.5+17.5+17.3+13.3) / 4 = 15.40
 EAST: (13.3+12.24) / 2 = 12.77
 WEST: (11.4+13.5+16.6+17.3) / 4 = 13.20
 54.13 / 4 = +13.53 AVERAGE GRADE PLANE

MAXIMUM BUILDING HEIGHT = 60'
 MAXIMUM ALLOWABLE BUILDING ELEVATION ABOVE AVERAGE GRADE PLANE = +73.52
 HEIGHT OF ROOF STRUCTURES ABOVE STAIRWELLS NOT TO EXCEED 20' ABOVE ALLOWABLE BUILDING HEIGHT (SECTION 504.3)

MAXIMUM NUMBER OF STORIES ABOVE ONE LEVEL OPEN PARKING = 4 (SECTION 509.4)

PARKING STRUCTURE
 NFPA 3.3.240.6
 DEFINITION OF OPEN PARKING STRUCTURE:
 1.4 S.F. WALL OPENING FOR EACH LINEAR FOOT OF EXTERIOR PERIMETER OPENINGS DISTRIBUTED UNIFORMLY OVER TWO OPPOSING SIDES

CALCULATIONS:
 EXTERIOR PERIMETER PARKING AREA = 223' - 10" (427' TOTAL PERIMETER)
 MULTIPLY BY 1.4 FOR REQUIRED OPEN AREA = 313.67 S.F. (597.8 S.F.)
 OPEN AREA PROVIDED = 844.33 S.F.

NFPA 101 EGRESS REQUIREMENTS

42.8.2.5.1 MAXIMUM COMMON PATH OF TRAVEL 50 FT
 42.8.2.5.2 MAXIMUM DEAD END TRAVEL DISTANCE 50 FT
 42.8.2.6 MAXIMUM TRAVEL DISTANCE TO EXIT 400 FT

ALLOWABLE BUILDING AREA:
 PER IBC 2009 TABLE 503 AND SECTION 506.3
 24,000 S.F. PER STORY

SOUND TRANSMISSION:
 SEPARATIONS FOR DWELLING UNITS SHALL HAVE A MINIMUM STC OF 50.

FOURTH FLOOR AREA: 14,112 SQ. FT.
 OCCUPANT LOAD 71
 APARTMENT BUILDING @ 1:200 GROSS 71

