BUILDING CODE REVIEW PROCESS

DATE: June 2006

Based on Construction of a new building, not all steps apply to a Tenant Improvement project.

ONE: Determine the Occupancy Classification (IBC/UBC Chapter 3)

1. Determine the principal intended occupancy of the building. There are ten (10) main occupancy classifications and several are divided into sub-classifications.

2. Determine if there are any secondary occupancies.
   - Incidental uses- Rooms that constitute special hazards.
   - Accessory uses- Areas limited in size that do not pose significantly different safety hazards.
   - Mixed occupancies- Uses that do not meet incidental or accessory use.

   Mixed occupancies may require fire rated separations (IBC Table 302.3.2, UBC Table 3-B). Fire sprinklers may omit fire separation requirements or lessen them.

TWO: Determine Building Attributes.

1. Calculate the square footage per floor. This is based on definition of “Building Area”- the area “within” exterior walls (inside face to inside face).

2. Determine the height of the building in feet. Based on definition of “ground plane”- imaginary reference place which is the average of “finish ground level” next to the building exterior walls.

3. Determine the height of the building in stories. This may include stories below ground for some code provisions.

4. Determine if the building will be fire sprinkled. May be an Owner decision or may be mandatory for some occupancy types.

THREE: Determine Type of Construction (IBC/UBC Chapter 6).

1. There are five (5) types of Construction:
   - Type I (Non-combustible and rated)
   - Type II (Non-combustible and rated or unrated)
   - Type III (Non-combustible exterior walls and combustible interior elements and rated or unrated)
   - Type IV Heavy timber and rated or unrated.
   - Type V Combustible and rated or unrated.
2. Types I, II, III, IV and V are further subdivided: (fire ratings)
   - Type I-A 3 hour frame, 2 hour floor, 1 ½ hour roof
   - Type I-B 2 hour frame, 2 hour floor, 1 hour roof
   - Type II-A 1 hour frame, 1 hour floor, 1 hour roof
   - Type II-B 0 hour frame, 0 hour floor, 0 hour roof
   - Type III-A 1 hour frame, 1 hour floor, 1 hour roof
   - Type III-B 0 hour frame, 0 hour floor, 0 hour roof
   - Type V-A 1 hour frame, 1 hour floor, 1 hour roof
   - Type V-B 0 hour frame, 0 hour floor, 0 hour roof

**FOUR:** Determine the location of the building on the property.

1. Determine clearances to property lines and other buildings. Fire separation distance is the distance from the building exterior walls to:
   - The closest interior property line or,
   - The center line of a street or,
   - An imaginary line between buildings on the same property.

   The fire separation distance must be measured at right angles to the building.

2. Determine actual percentage of exterior wall openings.

**FIVE:** Determine allowable increases (IBC Table 503, UBC 5-B).

1. Calculate height increases in stories: (IBC 504)
   - Sprinkler Increase

2. Calculate height increase in feet:
   - Sprinkler Increase

   Allowable stories and height are evaluated based upon:
   - Occupancy classification
   - Types of construction
   - Presence of a fire protection system

   This applies to new buildings and existing buildings to be enlarged. Evaluate existing buildings as if they were a new building.

3. Calculate area increases.
   - Sprinkler increase
   - Frontage increase

4. Check mixed area ratio.
SIX: Determine allowable area for multi-story buildings.

This may involve a decrease from previously calculated, allowable areas for single story buildings due to reduction in increase for sprinkler system. This may also have the effect of reducing the allowable area per floor, when buildings exceed three (3) stories.

SEVEN: Compare actual conditions with allowable maximums.

This is based on occupancy classification, type of construction, and sprinklers.

- Area
- Height in stories
- Height in feet

1. General height and area limitations determined by:
   - Type of construction and
   - Intended occupancy group(s)

2. Determine if buildings are “separate” or portions of larger building for purposes of allowable construction (IBC 503.1.2)

3. Height and area limits are found in IBC Table 503, UBC Table 5-B.

EIGHT: Determine special occupancy requirements, including:

1. High rise buildings.
2. Atriums.
3. Motor vehicle related occupancies, such as parking structures.
4. Stages and platforms.
5. Institutional type occupancies.

NINE: Determine exit requirements (IBC/UBC Chapter 10).

1. Quantity of exits.
2. Capacity of exits.
4. Travel distance to exits.
Establish the design occupant load by:
  • Actual number.
  • Number by table (IBC Table 1004.1.2, UBC Table 10-A) (it may not be less than this number).
  • Number by combination.
  • Increased occupant load permitted up to max of 1 occupant per 5 square feet.

Determine applicability:
  • Dead end corridors.
  • Travel distance.
  • Common path of travel.
  • Remoteness of exits.
  • Exit capacity.
  • Egress illumination.
  • Exit signs.
  • Projections into clear width.
  • Exit enclosures.

**TEN**: Determine accessibility requirements (IBC/UBC Chapter 11)

1. Exterior (site) requirements.
2. Toilet rooms.
3. Ramps.
4. Elevators.
5. Corridor width.
6. Other special accessibility requirements.

**ELEVEN**: Determine fire resistance of elements. (IBC Table 601 & 602, UBC Table 5-A, 6-A)

1. Exterior walls.
2. Fire walls.
3. Fire barriers.
4. Fire partitions.
5. Horizontal assemblies.
7. Smoke barriers.
8. Smoke partitions (normally not rated).
**TWELVE:** Determine general structural requirements. (IBC/UBC Section 16)

1. Seismic importance factor.
2. Seismic design category.
3. Design live loads.
4. Wind loads.
5. Snow loads.
7. Special load requirements (such as equipment or storage loads)

**THIRTEEN:** Determine fire protection requirements (IBC/UBC Chapter 9).

1. Type of sprinkler system.
2. Type and location of alarms.
3. Type of smoke and control system.
4. Type and location of standpipes.

**FOURTEEN:** Determine interior finish requirements (IBC/UBC Chapter 8).

**FIFTEEN:** Determine all other applicable, detailed code requirements.

1. Plumbing fixture requirements.
2. Energy efficiency requirements.
3. Elevators and conveying systems.
4. Special construction.
5. Local requirements.