

COMMERCIAL PROJECT CODE STUDY
BUILDING CODE STUDY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1-, 2-, 3-, AND 4-FAMILY DWELLINGS AND TOWNHOUSES)
 (Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: _____
 Address: _____ Zip Code _____
 Owner/Authorized Agent: _____ Phone # (_____) _____ - _____ E-Mail _____
 Owned By: City/County Private State
 Code Enforcement Jurisdiction: City _____ County _____ State

CONTACT:

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural	_____	_____	_____	(____) _____	_____
Civil	_____	_____	_____	(____) _____	_____
Electrical	_____	_____	_____	(____) _____	_____
Fire Alarm	_____	_____	_____	(____) _____	_____
Plumbing	_____	_____	_____	(____) _____	_____
Mechanical	_____	_____	_____	(____) _____	_____
Sprinkler-Standpipe	_____	_____	_____	(____) _____	_____
Structural	_____	_____	_____	(____) _____	_____
Retaining Walls	>5' High _____	_____	_____	(____) _____	_____
Other	_____	_____	_____	(____) _____	_____

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: New Building Addition Renovation
 1st Time Interior Completion
 Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
 Phased Construction - Shell/Core- Contact the local inspection jurisdiction for possible additional procedures and requirements

2018 NC EXISTING BUILDING CODE: EXISTING: Prescriptive Repair Chapter 14
 Alteration: Level I Level II Level III
 Historic Property Change of Use

CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): _____
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): _____

RISK CATEGORY (Table 1604.5): **Current:** I II III IV
Proposed: I II III IV

BASIC BUILDING DATA

Construction Type: I-A II-A III-A IV V-A
 (check all that apply) I-B II-B III-B V-B
Sprinklers: No Partial Yes NFPA 13 NFPA 13R NFPA 13D
Standpipes: No Yes Class I II III Wet Dry
Fire District: No Yes **Flood Hazard Area:** No Yes
Special Inspections Required: No Yes

Gross Building Area Table

FLOOR	EXISTING (SQ FT)	NEW (SQ FT)	SUB-TOTAL
3 rd Floor			
2 nd Floor			
Mezzanine			
1 st Floor			
Basement			
TOTAL			

ALLOWABLE AREA

Primary Occupancy Classification(s): (_____ *****SELECT ONE***** _____)

- Assembly A-1 A-2 A-3 A-4 A-5
- Business
- Educational
- Factory F-1 Moderate F-2 Low
- Hazardous H-1 Detonate H-2 Deflagrate H-3 Combust H-4 Health H-5 HPM
- Institutional I-1 Condition 1 2
 I-2 Condition 1 2
 I-3 Condition 1 2 3 4 5
 I-4
- Mercantile
- Residential R-1 R-2 R-3 R-4
- Storage S-1 Moderate S-2 Low High-piled
 Parking Garage Open Enclosed Repair Garage
- Utility and Miscellaneous

Accessory Occupancy Classification(s): _____

Incidental Uses (Table 509): _____

Special Uses (Chapter 4 – List Code Sections): _____

Special Provisions (Chapter 5 – List Code Sections): _____

Mixed Occupancy: No Yes Separation: _____ Hr. Exception: _____

Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

_____ + _____ + = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2 ⁴ AREA	(C) AREA FOR FRONTAGE INCREASE ^{1,5}	(D) ALLOWABLE AREA PER STORY OR UNLIMITED ^{2,3}

¹ Frontage area increases from Section 506.2 are computed thus:

- Perimeter which fronts a public way or open space having 20 feet minimum width = _____(F)
- Total Building Perimeter = _____(P)
- Ratio (F/P) = _____(F/P)
- W = Minimum width of public way = _____(W)
- Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30 =$ _____(%)

² Unlimited area applicable under conditions of Section 507.

³ Maximum Building Area = total number of stories in the building x D (maximum 3 stories) (506.2).

⁴ The maximum area of open parking garages must comply with Table 406.5.4. The maximum area of air traffic control towers must comply with Table 412.3.1.

⁵ Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE
Building Height in Feet (Table 504.3)			
Building Height in Stories (Table 504.4)			

¹ Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	REQ'D	RATING		DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
			PROVIDED (w/ _____)*	REDUCTION				
Structural Frame, including columns, girders, trusses								
Bearing Walls								
Exterior								
North								
East								
West								
South								
Interior								
Nonbearing Walls and Partitions								
Exterior walls								
North								
East								
West								
South								
Interior walls and partitions								
Floor Construction Including supporting beams and joists								
Floor Ceiling Assembly								
Columns Supporting Floors								
Roof Construction, including supporting beams and joists								
Roof Ceiling Assembly								
Columns Supporting Roof								
Shaft Enclosures - Exit								
Shaft Enclosures - Other								
Corridor Separation								
Occupancy/Fire Barrier Separation								
Party/Fire Wall Separation								
Smoke Barrier Separation								
Smoke Partition								
Tenant/Dwelling Unit/ Sleeping Unit Separation								
Incidental Use Separation								

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

- Emergency Lighting: No Yes
- Exit Signs: No Yes
- Fire Alarm: No Yes
- Smoke Detection Systems: No Yes Partial _____
- Carbon Monoxide Detection: No Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: _____

- Fire and/or smoke rated wall locations (Chapter 7)
- Assumed and real property line locations (if not on the site plan)
- Exterior wall opening area with respect to distance to assumed property lines (705.8)
- Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
- Occupant loads for each area
- Exit access travel distances (1017)
- Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
- Dead end lengths (1020.4)
- Clear exit widths for each exit door
- Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
- Actual occupant load for each exit door
- A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
- Location of doors with panic hardware (1010.1.10)
- Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
- Location of doors with electromagnetic egress locks (1010.1.9.9)
- Location of doors equipped with hold-open devices
- Location of emergency escape windows (1030)
- The square footage of each fire area (202)
- The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)

Note any code exceptions or table notes that may have been utilized regarding the items above:

**ACCESSIBLE DWELLING UNITS
(SECTION 1107)**

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

**ACCESSIBLE PARKING
(SECTION 1106)**

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES		# OF ACCESSIBLE SPACES PROVIDED			TOTAL # ACCESSIBLE PROVIDED
	REQUIRED	PROVIDED	REGULAR WITH 5' ACCESS AISLE	VAN SPACES WITH		
				132" ACCESS AISLE	8' ACCESS AISLE	
TOTAL						

**PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)**

USE		WATERCLOSETS			URINALS	LAVATORIES			SHOWERS /TUBS	DRINKING FOUNTAINS	
		MALE	FEMALE	UNISEX		MALE	FEMALE	UNISEX		REGULAR	ACCESSIBLE
SPACE	EXIST'G										
	NEW										
	REQ'D										

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

ENERGY SUMMARY

ENERGY REQUIREMENTS:

The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: No Yes (The remainder of this section is not applicable)

Exempt Building: No Yes (Provide code or statutory reference): _____

Climate Zone: 3A 4A 5A

Method of Compliance: Energy Code Performance Prescriptive
ASHRAE 90.1 Performance Prescriptive
(If "Other" specify source here) _____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)

Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Skylights in each assembly: _____
 U-Value of skylight: _____
total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)

Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Openings (windows or doors with glazing)
 U-Value of assembly: _____
 Solar heat gain coefficient: _____
 projection factor: _____
 Door R-Values: _____

Walls below grade (each assembly)

Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)

Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade

Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/vertical requirement: _____
slab heated: _____

COMMERCIAL PROJECT CODE STUDY
BUILDING CODE STUDY FOR ALL COMMERCIAL
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_s) _____
Seismic (I_E) _____

Live Loads: Roof _____psf
Mezzanine _____psf Floor
_____psf

Ground Snow Load: _____psf

Wind Load: Basic Wind Speed _____ mph (ASCE-7)
Exposure Category _____

SEISMIC DESIGN CATEGORY: A B C D

Provide the following Seismic Design Parameters:

Risk Category (Table 1604.5) I II III IV

Spectral Response Acceleration S_s _____%g S₁ _____%g

Site Classification (ASCE 7) A B C D E F

Data Source: Field Test Presumptive Historical Data

Basic structural system Bearing Wall Dual w/Special Moment Frame
 Building Frame Dual w/Intermediate R/C or Special Steel
 Moment Frame Inverted Pendulum

Analysis Procedure: Simplified Equivalent Lateral Force Dynamic

Architectural, Mechanical, Components anchored? Yes No

LATERAL DESIGN CONTROL: Earthquake Wind

SOIL BEARING CAPACITIES:

Field Test (provide copy of test report) _____psf

Presumptive Bearing capacity _____psf

Pile size, type, and capacity _____

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**MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)**

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone

winter dry bulb: _____
summer dry bulb: _____

Interior design conditions

winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System

Unitary

description of unit: _____
heating efficiency: _____
cooling efficiency: _____
size category of unit: _____

Boiler

Size category. If oversized, state reason: _____

Chiller

Size category. If oversized, state reason: _____

List equipment efficiencies: _____

