

NC Rehab Code Case Study

37 Biltmore Ave.

March 7, 2002; revised 4/12/02

PART A: Project Data and Classification

1. Project name & location

Renovation for Doc Chey Noodle House, 37 Baltimore Ave., Asheville, NC

2. Project description

The building is 3 stories with a full basement. Size of the net floor plan is small, approximately 2,225 sq. ft/floor. Construction is IBC Type III (SBC Type V, load-bearing masonry, unprotected).

The current use is a mix as follows:

- Mercantile(M); an art gallery on the first floor
- Residential (R2); apartments on the second floor
- Business (B); art studio on the 3rd floor
- The basement will be used for storage (S)

This proposed use is a restaurant on the first floor, with a kitchen in the rear. Given the size of the front space, we assumed less than 100 occupants would be in the restaurant;

- Under 1999 NCSBC, it is classified as a “B” use.
- Under 2002 NCSBC (IBC), it is classified A2

We also assumed all framing; systems and finish in the first floor area would be new.

The building is considered historic.

3. Plan availability

Both existing plans are attached.

4. Scope declaration and justification

Assuming occupancies on the second and 3rd floor were legally permitted previously, the issue to study is the impact of work area scope on the first floor. The entire first floor will be affected, so a primary function area will be involved.

The analysis should review:

- CHANGE OF USE
- HISTORIC
- RECONSTRUCTION: but analyze the difference between alteration and reconstruction requirements for 1st floor work.

In addition, the work area, and its impact on the building, must be analyzed for compliance with the code under which it was constructed.

PART B: NC Rehab Code Requirements

1. For Change of Use: (assuming 2002 code)

- Proposed 1st floor change of use is from M to A2, with no change at 2nd, and a change from B to R-2 at the 3rd floor.
- Use group hazard is equal or lesser: no change required
- Means of egress hazard: 1st & 2nd are equal or lesser; 3rd floor is increase
 - Maximum occupant load to be calculated by 1.11b
 - Occupant load may not exceed 5/sq ft, unless complying with IBC Chapter 10
 - Where reconstruction scope in a work area triggers such requirements, comply with egress requirements stipulated in 1.31c.2
 - Comply with the single exit provisions of IBC 1005.2.2
 - T1005.2.2 limits “B” occupancy to 2 stories, 30 occupancy, 75’ travel
 - T1005.2.2 limits “R2” occupancy to 4 units, 50’ travel
- Height and Area hazard is equal or lesser: no change required
- Exterior wall exposure hazard is equal or lesser: no change required
- Fire suppression hazard: : 1st & 2nd are equal or lesser; 3rd floor is increase
 - Provide fire suppression where work performed triggers those requirements
 - If use separation complies with IBC T 302.2.2, fire suppression only required in R-2
 - Alarms required: change of use to A, B, E, F, H, I, M, and R1/2 triggers alarm requirements throughout the building
 - In B per IBC 907.2.2 (occupancy less than 100 above LED)
 - In R-2 per 907.2.9 (not 3 stories or greater than 16 units)
- Structural load categories are equal or lesser no change required
- Mechanical requirements cover any commercial hood installed in the restaurant: 1.31m.2

2. For Mixed Use

- Non residential use below dwelling unit, with work area exceeding 50%, requires 1 hour ceiling separation from residential: 1.29b
- Non residential use below dwelling unit, with work area exceeding 50%, requires smoke detection per NFPA72, alarming in the dwelling unit: 1.29c

3. For Historic

- Requests for variation considered: 1.33a.2
- Original or replica materials allowed: 1.33b.1
- Exterior walls not required to be modified to meet fire resistive wall construction: 1.33b.2
- Existing lath and plaster may substitute for 1 hr fire resistive construction: 1.33b.3
- Exit’s egress door openings and corridors may be approved if enough width for a person: 1.33b.5
- Exit’s front or main egress door need not swing in exit direction if less than 50 occupants: 1.33b.6
- Exit’s transoms may remain: 1.33b.7
- Exit’s interior finishes may remain if historic: 1.33b.8
- Exit’s stairways may retain tread, riser and width dimensions: 1.33b.9
 - enclosure requirement omitted at 1st and 2nd floor
 - only smoke limiting construction req’d
- existing handrails may remain
- existing ceiling heights may remain

2. If the project is ALTERATION

- may not diminish structural capacity: 1.6c
- existing alarms, sprinklers and standpipes maintained: 1.6c.2
- may not diminish accessibility: 1.6c.3
- May not use some products and practices: 1.6d
 - Re: wood paneling, carpet, electric L&L, and selected plumbing materials
 - Restriction on removal of lead based paint: 1.6d.6
- Specific requirements on other products and practices: 1.6e
 - Water saver water closets
 - Apply accessibility requirements on selected items or areas:
 - work in bath or toilet rooms: 1.6e.2
 - new or replacement doors: 1.6e.3
 - replacement entry steps: 1.6e.4
 - safety glazing requirements apply to selected areas: 1.6e.6
 - any removed fireproofing material must be replaced with equal rating: 1.6e.7
 - electrical repair/replacement requirements for the following: 1.6e.8
 - receptacles
 - plug fuse replacement
 - receptacle grounding
 - grounding of ranges, ovens, cooktops, and cloths dryers,
 - new refrigerants to comply with the mechanical code
- if the building exceeds Basic Requirements, may not decrease below 2002 NCSBC requirements: 1.6f
- All new materials comply with 1.8 materials and methods
 - On handrails and guardrails; apply new requirements if 50% replaced, match existing if less, compliance sections specified: 1.6h.2
- All new building elements comply with 1.9: 1.6j
 - New floor openings comply with IBC 707: 1.9a.3
 - New door openings comply with IBC1003.3 &714: 1.9a.5
 - New openings in fire rated assemblies protected per IBC 711: 1.9a.6
 - New exit discharge complies with IBC 1005.3: 1.9a.7
 - New exit stairs comply with IBC 1005.3: 1.9a.8
 - New fire escapes to be constructed per 3403 of IBC: 1.9a.9
 - New elevators comply with IBC chapter 30. 1.9a.10
 - new corridors comply with IBC 1004.3.2.1 –1004.3.2.3, 1004.3.2.4, and 1004.3.2.5: 1.9a.11
 - New electrical equipment must comply with 1.9a.18
 - New tenant separation requirements per IBC 708: 1.9a.19
- Further accessibility requirements: 1.6k
 - If space altered is primary work area, provide accessible path within disproportionate limits
 - Where technically infeasible (see definitions in 1.3), comply with maximum extent
 - feasible.

3. Reconstruction (unless excepted by 1.33 historic)

3a. General requirements

- may not diminish structural capacity: 1.7c
- existing alarms, sprinklers and standpipes maintained: 1.7 c.2
- may not diminish accessibility: 1.7c.3

- May not use some products and practices: 1.7d
 - Re: carpet, electric L&L, and selected plumbing materials
 - Restriction on removal of lead based paint: 1.7d.6
 - Specific requirements on other products and practices: 1.7e
 - Water saver water closets
 - Apply accessibility requirements on selected items or areas:
 - work in bath or toilet rooms: 1.7e.2
 - new or replacements doors: 1.7e.3
 - replacement entry steps: 1.7e.4
 - safety glazing requirements apply to selected areas: 1.7e.6
 - any removed fireproofing material must be replaced with equal rating: 1.7e.7
 - electrical repair/replacement requirements for the following: 1.7e.8
 - receptacles
 - plug fuse replacement
 - receptacle grounding
 - grounding of ranges, ovens, cooktops, and cloths dryers,
 - new refrigerants to comply with the mechanical code
 - All new materials comply with 1.8 materials and methods
 - On handrails and guardrails; apply new requirements if 50% replaced, match existing if less, compliance sections specified: 1.7f.2
 - accessibility requirements apply to:
 - altered toilet rooms: 1.7e.2
 - new doors: 1.7e.3
 - new entry steps: 1.7e.4
 - All new materials comply with 1.8 materials and methods
 - On handrails and guardrails; apply new requirements if 50% replaced, match existing if less, compliance sections specified: 1.6h.2
 - All new building elements comply with 1.9
 - New floor openings comply with IBC 707: 1.9a.3
 - New door openings comply with IBC1003.3 & 714: 1.9a.5
 - New openings in fire rated assemblies protected per IBC 711: 1.9a.6
 - New exit discharge complies with IBC 1005.3: 1.9a.7
 - New exit stairs comply with IBC 1005.3: 1.9a.8
 - New fire escapes to be constructed per 3403 of IBC: 1.9a.9
 - New elevators comply with IBC chapter 30. 1.9a.10
 - new corridors comply with IBC 1004.3.2.1, 1004.3.2.3, 1004.3.2.4, and 1004.3.2.5: 1.9a.11
 - New electrical equipment must comply with 1.9a.18
 - New tenant separation requirements per IBC 708: 1.9a.19
 - Comply with Basic or Supplemental requirements for that use
 - Further accessibility requirements: 1.6k
 - If space altered is primary work area, provide accessible path within disproportionate limits
 - Where technically infeasible (see definitions in 1.3), comply with maximum extent feasible.
- 3b. Basic and Supplemental Use requirements for all uses from 1.11
- Means of egress capacity per 1.11 Table 1
 - Exit's interior finishes must have min flame spread of I in exits and II in exit access: Table 2

- 3c. A-2 Assembly use Basic Requirements from 1.13 (if using the 2002 NCSBC)
- Sprinklers required in buildings with 50 or more occ (2 exceptions): 1.13a
 - 2 exits required: 1.13b
 - single exit permitted in story if less than 50 occ at LED and travel distance 75' or less
 - 2 egress doors required in spaces or rooms with occupant load greater 50 or 75' travel: 1.13c
 - exit capacity per 1.11: 1.13d
 - additional requirements if building occ load of 100 or more
 - max 35ft existing dead end: 1.13e
 - means of egress lighting required at 1 fcl: 1.13f
 - exit signs required: 1.13g
 - handrails required one side: 1.13h
 - provide guards where elevation drop is greater than 30": 1.13i
 - vertical opening protection of 30 minute rating required: 1.13j
 - reinforce deficient/unsound structural elements: 1.13k
 - Plumbing facility requirements per 1.13L:
 - If less than 26 occupants: 1 unisex wc, 1 lav,
 - If 26 or more: provide fixtures per T407 of NC Plumbing Code
 - Ventilate per 1.13m
 - Interior finishes to comply with 1.11: 1.13n
 - Exposed framing shall comply with firestop/draftstop reqmt's of IBC 716: 1.13q

3d. A-2 Assembly use Supplemental Requirements per 1.13A:

- Sprinklers not required as less than 5,000 sf: 1.13A.a
- Automatic alarm required in storage, workshop, boiler or furn rm: 1.13A.b
- Manual alarm not required as bldg is less than 4 stories : 1.13A.c.
- If work area exceeds 50% of building floor area, provide vertical opening protection throughout: 1.13A.d

3e. Business use Basic Requirements from 1.17 (if using the 1999 NCSBC)

- 2 exits required: 1.17a
 - existing fire escapes shall be accepted if judged to be safe: 1.17 a.1
 - single exit permitted in buildings 3,000 sq. ft or less and travel distance 75' or less
- 2 egress doors required in spaces or rooms with occupant load greater 50 or 75' travel: 1.17b
- exit capacity per 1.11: 1.17c
- max 35ft existing dead end: 1.17d
- means of egress lighting required at 1 fcl: 1.17e
- exit signs required: 1.17f
- handrails required one side: 1.17g
- provide guards where elevation drop is greater than 30": 1.17h
- vertical opening protection of 30 minute rating required: 1.17i
- reinforce deficient/unsound structural elements: 1.17j
- Plumbing facility requirements per 1.17k:
 - If less than 26 customers: 1 unisex wc, 1 lav, 1dwc, 1 service sink
 - If 26 or more customers: provide fixtures per T407 of NC Plumbing Code
 - Ventilate per 1.17L
- Interior finishes to comply with 1.11: 1.17m
- Exposed framing shall comply with firestop/draftstop reqmt's of IBC 716: 1.17o

3f. Business use Supplemental Requirements per 1.17A:

- Manual alarm required: 1.17A.a

- If work area exceeds 50% of building floor area, provide vertical opening protection throughout: 1.17A.b

3g. Residential R-2 use Basic Requirements from 1.26

- Single exit permitted if max 2 stories, floors max 16ft above grade and max 4 units. 1.26a.7
- Min 1 hour exit construction
- DU window requirements
- Sleeping room emergency egress windows required per 1.26b
- DU corridor doors must be 1 3/8" sc with closers
- exit capacity per 1.11
- max 35ft existing dead end
- means of egress lighting required at 1 fc
- exit signs required
- handrails required one side
- provide guards where elev drop is greater than 30"
- vertical opening protection of 30 minute rating required, unless building is sprinkled
- reinforce deficient/unsound structural elements
- electrical requirements per 1.26n
- Plumbing fixture requirements IPC T407
- Mechanical requirements per 1.26p
- NC Accessibility Code applies
- Communicating unit attic space must have 1 hour sep
- Exposed framing shall comply with firestop/draftstop req'ts of IBC 716

3h. R-2 Supplemental Requirements per 1.26A:

- Smoke detection required in units per IBC

3i. Special Technical Requirements per 1.30:

- Existing alarm systems accepted if they comply with 1.8 or the code in effect at the date of their installation: 1.30f