

# NEW YORK STATE HOMES AND COMMUNITY RENEWAL

## NEW YORK STATE HOUSING TRUST FUND CORPORATION



**Office of Housing Preservation**  
and  
**Office of Finance and Development**  
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DESIGN HANDBOOK

This edition, dated September 2013 (rev 1), is being issued to correct a change made in section 4.04.08 B.1 of the September 2013 edition, and for other minor formatting and text changes. Blue text is used to indicate revisions incorporated since the September, 2012 edition of the Design Handbook

# *NYS HCR Design Handbook.....*

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# Section 1 .....

## *Purpose and Goals*

### **1.01 Purpose of Handbook**

The Design Handbook [has been created](#) to assist the applicant and architects in creating functional, safe, durable and cost-effective projects [which provide](#) minimum housing standards for the benefit of residents. This handbook applies to new construction and (to the greatest degree practical) substantial rehabilitation projects. For Moderate Rehabilitation Projects, see Appendix F, “HTFC Preservation Standards.” The handbook includes submission, design and specification requirements and design goals and objectives. In addition to the Design Handbook, project applicants and architects may need the following publications to ensure full compliance with all submission criteria:

- Request for Proposals (RFP)
- Capital Programs Manual (CPM)

All publications, [including the Design Handbook](#), can be obtained online at <http://www.nyshcr.org>.

The purpose of the handbook is to apprise the applicant and their architects of HCR’s design and specification requirements so they can be factored into a project’s design proposal and development budget at the time an application is submitted for funding administered by the New York State Homes and Community Renewal (HCR) and the New York State Housing Trust Fund Corporation (HTFC).

Potential applicants needing technical assistance on the design requirements contained in this manual prior to submitting an application for funding are encouraged to contact the Office of Finance and Development (OFD)’s Regional Offices.

Low-income housing projects are recommended for funding to the Commissioner/CEO based upon competitive scoring criteria and technical reviews performed by HCR’s Underwriting and Architectural/ Engineering staff to determine a project’s economic and design feasibility. See *Section 3.01 for preliminary design review criteria*.

The applicant is responsible to ensure that all application submission requirements prepared by the project architect are provided. All application submissions must also meet certain threshold criteria including program eligibility, site control and site selection requirements. (Refer to Site Requirements, Section 5.03 of the Capital Programs Manual for more detailed information.)

HCR reviews each application for cost effectiveness and cost reasonableness. If selected for an award, the cost represented in the application will be incorporated into the funding commitment. Therefore, the applicant should make sure that the project’s scope of work, as represented by the architect’s plans and specifications, is well defined and that the preliminary cost estimate is accurately prepared by a construction contractor or cost estimator.

### **1.02 Design Goals and Objectives**

The primary purpose in creating this Design Handbook is to aid the applicant and architects in producing functional, safe, durable, and cost-effective housing. Our other objective is to add value to communities and pride amongst occupants. The following objectives must be included, where applicable, in developing design solutions that work to enhance community neighborhoods and create housing projects that promote community pride.

## **1.02.01 Site Development**

- A. Site development should be compatible with project surroundings, e.g.:
1. Maintain neighborhood scale
  2. New and existing setbacks should be consistent;
  3. Building heights and bulk, as seen from the street, should be respected; and
  4. Use building materials which are compatible with the neighborhood
- B. Neighborhood traffic patterns should be respected, e.g.:
1. Internal roads should relate to existing and planned alignments of abutting neighborhood roads, but at the same time should discourage through traffic and speeding;
  2. Curb cuts should be minimized and alternate parking solutions found;
  3. Intersections should generally be at right angles, avoiding off-sets; and
  4. If an existing pedestrian or bikeway system exists in the surrounding area, site development should enhance and continue the system.
  5. Acoustic buffers must be provided if outside noise levels are higher than 65 decibels.
- C. Open space should be useful and accommodating, e.g.:
1. Provisions should be made to accommodate both social interaction and privacy for residents;
  2. Sitting areas and walkways should be arranged to facilitate conversation, casual interaction, and social contact (e.g.: orientate seating toward street activities);
  3. A clear separation in the use of public and private space should be made;
  4. Outdoor space and public sidewalks should be shaded and made attractive by the presence of trees;
  5. Paved areas should be characterized by high quality, easily maintained materials which are attractive in terms of their color and texture; and
  6. Provide children's play areas with play equipment in family projects of 20 or more dwelling units, including multi-site, projects located on contiguous sites. [Play equipment shall be selected to promote physical activity and use for all age groups from toddlers to adolescents.](#)

Children's defined play areas should be safe, related to their building unit and located so as not to disturb residential activities. e.g.:

- Private outdoor space used for children's play should be located for easy supervision;
- Play areas for the younger groups should be accessible without crossing a vehicular path;
- Play areas should only be located adjacent to a drive or parking lot if protected by physical barriers capable of stopping a moving car;
- Children's defined play areas should be safe, related to their building unit and located so as not to disturb residential activities;
- Play areas should be distinct. Separate areas for toddlers/preschoolers, and teenagers should be provided in family projects; and
- Safety surfaces shall be used all play equipment in conformance with U.S. Product Safety Commission guidelines, latest edition. Gravel, wood chips and rubber chips/beads are not considered accessible for the mobility impaired, are not considered healthy for children and are not to be utilized.
- Play areas should be enclosed with fencing to provide safety and

- protection to children.
  - Play areas are to be located on an accessible route to allow access to individuals in wheelchairs.
  - Play equipment shall be selected to provide equivalent play experiences and opportunities for children with disabilities.
7. Existing trees should be maintained.
  8. Storm water management areas shall be fenced or provided with other recognized design measures, such as an aquatic bench designed to NYS DEC standards, to ensure safety for children who are residents of the project or the surrounding neighborhood.
- D. Common project space should be secure. Public ways and exterior spaces should be visible from dwelling units and interior common spaces, e.g.-
- Avoid recessed or hidden spaces;
  - Public spaces should permit easy supervision by security forces;
  - The entire parking area should be visible from a point at the exit;
  - Stairways should exit into areas that are visible to the public and nearby dwellings; and
  - In projects with individual dwelling unit entrances, parking areas should be small and in proximity to dwellings to allow supervision of space and one's own car.
- E. Access to buildings within the site should be easy and convenient.
1. Paved walkways and drives should provide a direct and visible connection between the street and main entrance door.
  2. In multi-story buildings, family units should be located on lower floors to enable easy access for children and easy child supervision for parents.
- F. Community facilities should be part of the most public walkways of the pedestrian system and be generally central to all units.
- G. In multi-building projects, concrete walkways should connect each building to the street, to parking, and other buildings.
- H. All essential portions of the pedestrian system should be passable in poor weather, i.e., capable of being mechanically snow plowed, sheltered from sweeping winds, and well drained to prevent flooding and icing.
- I. Building entrances should provide shelter from sun, wind, and precipitation.
- J. Where possible, ramps should be provided instead of or in addition to stairs. Exterior ramps, stairs and their respective approaches to the ramps must be designed so water and snow will not unnecessarily accumulate on them.
- K. Building and open spaces should be oriented and arranged to benefit from environmental conditions.
- L. Sun should enter each dwelling unit some part of the day year-round.
- M. Interesting and enjoyable views to areas outside the site should be afforded from dwellings, indoor common areas, and outdoor sitting areas.
- N. In addition, senior housing projects should have:
1. Outdoor space that contains flower and vegetable gardens, (i.e. attractive exterior environment which promotes the perception of safety, personal value, and a home-like atmosphere.)

2. Areas for both interaction and separation between children and the elderly in age-integrated projects;
3. Sitting areas and walkways arranged to facilitate conversation, casual interaction and social contact.

### **1.02.02 Shared Common Space**

This section applies to multi-dwelling projects of twenty or more units.

- A. Community space should be informal, varied and accessible.
- B. Community space should be functionally and visually related to the circulation pattern of the building or buildings.
- C. The main entrance and community space should be in a central location.
- D. The interior of a community space should be directly visible from major circulation points.
- E. Common outdoor spaces in the form of balconies or terraces should be provided adjacent to and as extensions of indoor community spaces wherever possible.
- F. Common support areas should be easily located and accessible.
- G. Tenants should be able to collect mail without obstructing traffic.
- H. Laundry facilities should be located for accessibility.
- I. Interior public circulation and elevators should be safe and secure.
- J. Elevator lobbies should have a waiting area and wall indicators describing elevator progress which can be clearly read.
- K. Corridors should be a minimum of five feet in width at all points.
- L. In addition, senior housing projects (for persons 55 years of age or older) must include:
  1. A communal gathering area that provides privacy from the main building entrance;
  2. Common areas that have sufficient *pre-view* area so the resident can choose to join present participants or to withdraw;
  3. Common areas should have flexibility for multi-purpose uses and provide an intimate atmosphere for socialization;
  4. Comprehensible path systems, such as loop corridors, an orienting central atrium or other interior space;
  5. Path systems that allow a preview of the route ahead;
  6. Windows that enhance residents' inside/outside reference system to facilitate inside navigation and spatial orientation, particularly if the complex has several wings or is built on a sloping lot;
  7. Latent cues that make visually distinctive landmarks or reference points such as plant groupings, fish tanks, art work, distinctive curtains or wallpaper, personal decor, specific furnishings such as a piano, specific areas such as beauty shop/chapel/ post office/elevators, etc.;
  8. Reference symbols to identify such features as elevators, dining halls, etc. placed both parallel and perpendicular to the object so as to be seen from both direct and lateral approaches;
  9. Wall mounted handrails that are easily grasped shall be provided on each side of corridors in multi-unit buildings;

10. Exit signs lowered for the vision impaired who often have limited upward vision;
11. Contrasting colors/surfaces, or the provision of edge cues used on stairs. This will distinguish one step from another and differentiate between steps and risers;
12. Changes in the level of illumination graduated to accommodate a slower dark/light adaptation rate;
13. General lighting that:
  - is indirect, to avoid glare;
  - is evenly distributed, to reduce shadows; and
  - Increases the number of lighting fixtures in dwelling units to provide more even light distribution to compensate for age related vision loss.  
(The Illuminating Engineering Society recommends that persons aged 60+ be provided with twice the level of light required for persons 20 years of age.)
14. Large, tactile, contrasting-colored numerals and signs used in elevators, on appliances, on doors, etc. to compensate for declining ability to distinguish edges, small details, and certain colors;
15. Signage colors that are not pastel tones, dark shades, greens, blues, and violets which are difficult to differentiate, as eyes yellow with age;
16. Lighting that reduces visual fatigue and gives better color rendition;
17. Alarm/warning systems that are available to include both visual and audible signals; and
18. Visual signals available to augment doorbells.

### **1.02.03 Dwelling Unit Space**

#### **A. Kitchen**

1. Kitchens should have natural light.
2. Kitchens should have direct and easy access from the exterior.
3. Kitchens having no available natural light should open up to the living room/dining room via a pass-thru window arrangement.
4. Placement of refrigerators in a circulation path should be avoided.

#### **B. Living Room/Dining Room**

1. Living Room/Dining Room areas should have windows that allow for viewing the exterior when seated.
2. Through circulation should be avoided.
3. The unit's entry area should be separated or screen from the living room/dining room.
4. A minimum of one wall, preferably two, should be provided with no fenestrations to allow for adequate furniture placement.

**C. Bedrooms**

1. Bedrooms should be located away from parking or street noise whenever possible.
2. Closets should be used to provide a sound barrier between bedrooms.
3. Bedrooms should be grouped together and located away from living/dining/kitchen.

**D. Bathrooms**

1. Vanities should be provided with all lavatory sinks, unless bathrooms are to be handicapped accessible.
2. Bathrooms should be located outside of, but adjacent to bedrooms.

**E. Storage**

Walk-in storage closets should be provided with a light and wall switch.

**F. Dwelling Units for Seniors**

In addition, senior housing projects (for persons 55 years of age or older) must include:

1. Complete apartments provided rather than studio/efficiency units. Complete apartment units (include kitchen, bathroom, living room, dining area, and bedroom) are appropriate for older persons because they prefer to cook, eat and entertain in their own apartments. Complete apartments are also non-institutional in appearance and provide greater privacy. Sufficient living/dining room space allows and encourages socialization with guests;
2. Individual treatment of apartment entryways that facilitates way-finding, reduces institutional appearance, and enhances individualism;
3. Window sill heights that are no greater than 32 inches above finished floor to allow viewing the outside from a seated position;
4. Pantry cabinetry provided in lieu of wall cabinets over the stove and refrigerator; and
5. Switches, and other operable devices, located no more than 48 inches above finished floor height, electrical outlets mounted between 18 - 24 inches above finished floor.

## **Section 2 .....**

# **Construction Contracting Requirements**

At the time of application, the applicant must identify one of two options available to secure a construction contractor. The first option is for the applicant to seek construction bids through a publicized, competitive process. The second option is for the applicant to identify and select a builder at the time of application submission. The requirements for both options are explained below.

### **2.01 Publicized, Competitive Bidding Process**

The applicant electing to publicly and competitively bid the construction portion of their project must indicate this elective at the time of application submission.

This method of contractor selection requires the applicant to openly advertise in a well-known local newspaper for a period of four days and have a minimum bidding period of four weeks before bids are received. MBE/WBE outreach requirements will be part of the bidding process. See Section 2.04 for Federal Labor Standards (Davis-Bacon Related Acts) regulatory requirements. Upon receipt of bids, the applicant and architect must notify HCR of the bidding results and the name of the selected lowest qualified bidder. The contractor's schedule of values must also be submitted to HCR at that time. HCR/HTFC reserves the right to rebid a project or to negotiate a reduction in the scope of work if all bids received are higher than the project's estimated total construction cost.

If no contractor has been selected at the time of application submission, the applicant must ensure that the terms of the Owner/Architect Agreement include a provision for a detailed construction cost estimate based upon the preliminary drawings and specifications prepared by a cost estimator.

### **2.02 Pre-Selected Contractor/Construction Manager Requirements**

The applicant who elects to include a construction manager (CM)/contractor with their application for funding will be required to indicate the CM/contractor's previous professional experience in producing low income housing units and the role the CM/contractor will play during the development and construction phases of the project.

In addition, a pre-selected contractor will be responsible for providing a detailed cost estimate of the construction work based upon the preliminary drawings and specifications with the application submission. The construction cost estimate must include general requirements (3% to 6% of the labor and material costs); builder's overhead (up to 4% of the construction amount is allowed); and builder's profit (up to 10% of the construction amount allowed). General requirements that are special conditions such as security, impact fees, etc. to a project should be detailed on a separate itemized listing.

At the time of the funding commitment, the applicant will be required to provide a guaranteed price for the total development costs of the project. Any construction cost overruns incurred during the development and construction phases of the project shall be borne by the applicant and shall be paid for from the developer's fee amount. Using a pre-selected contractor permits the applicant to *by-pass* the Bid Document submission stage, thus creating only one set of submission requirements: the Contract Documents.

All MBE/WBE requirements applicable to the pre-selected contractor must be documented through the contractor's selection process for sub-contractors and suppliers.

## **2.03            *General Construction Contracting Requirements***

The applicants, architects and contractors should refer to the Capital Programs Manual for related information on the selection of a builder, construction manager and bonding requirements for payment and performance. Refer to the Section 3.04 ([Contract Documents](#)) A.3 for Owner/Contractor contract submission requirements.

### **2.03.01            *Manufactured Housing Requirements***

The applicants electing to produce housing through the use of a manufactured housing company, may choose either of the options above for construction contracting. However, the purchase contract and supervision of such housing must be done as a subcontract to the general contractor's/CM's contract.

## **2.04            *Federal Labor Standards***

See the Capital Programs Manual and the funding round reference material for the specific information concerning the Federal Labor Standards.

# Section 3 ..... *Submission Requirements*

The following sections explain the specific items and level of detail required for the application, architect's contract, bid, contract and close-out submissions. Completeness will be determined based upon compliance with these submission requirements. Incomplete submissions will not be reviewed by staff. Complete submissions will be reviewed and comments provided to the project applicant.

All submissions referenced in this section, from preliminary design documentation at the project application to the final construction contract documents, shall be the responsibility of a single licensed design professional or firm.

## **301          *Preliminary Design Review Criteria***

The most critical review stage is that of the preliminary documents. Listed below are the documents reviewed by the HCR A & E Bureau:

1. Proposal Summary
2. Organization's Relevant Experience
3. Site Specific Information
4. Building Information
5. Preliminary Design Documents
6. Outline Specifications
7. Detailed Cost Estimate
8. Development Budget
9. Development Timetable
10. Zoning Compliance
11. Site Photographs

The review criteria for each of the above-listed documents are as follows:

- A. The ***Proposal Summary*** is reviewed to get an overall understanding of the proposed project; to identify any special housing conditions that may need to be addressed by the design solution based on a specified tenancy; and to verify the number and unit mix indicated in the summary with the information found within the drawings.
- B. The ***Organization's Relevant Experience*** is reviewed to ascertain the project applicant's development team members' experience. The experience of the architect selected by the project applicant is reviewed to determine if the architect has sufficient knowledge and expertise in designing low-income housing; has historic preservation experience, should the building be identified as such; and, to identify any previous experience that HCR has had with the project architect.
- C. ***Site Specific Information*** : Reviewed to verify that the information represented in this exhibit is in agreement with the drawings; that any State or Federal regulations affecting Historic Places, Coastal Zone, Flood Plain wetlands or Waterfront Revitalization planning has been incorporated into the design solution; that all existing utility connections are indicated on both the drawings and this exhibit; that the most efficient heating source for the building has been selected; and that there are no unusual conditions that would be costly to mitigate.
- D. ***Building Information***: Reviewed to verify that the information provided in this exhibit is consistent with the drawings submitted; that the unit mix is identical to the plans; and that the square foot figures are accurate.

E. **Preliminary Design Documents:**

1. **Site Plan:** Reviewed to verify that the site can accommodate the size and scale of the proposed project; that the site is level or can accommodate minor changes in contours without costly cut and fill procedures; that there is adequate space on the site to accommodate all parking requirements; that any zoning regulations, setbacks, existing rights-of-way do not interfere with the location of the building or other permanent structures; and, for New York City projects involving new construction; that the proposed building footprint is in compliance with the zoning regulations. For non-urban projects where a septic system or well is required, the review verifies that the proposed site has adequate space and distance separation for locating on-site utilities.
2. **Floor Plans:** Reviewed to verify that the minimum square footage has been achieved; that the building(s) is in compliance with all building code and zoning requirements; that the project meets all handicapped accessibility requirements: that the building(s) meets all design requirements in Section 4.00 of the Design Handbook; and, if the building has any non-residential space, that the HVAC and electrical systems are separate and independent from the systems of the residential space.
3. **Elevations:** Reviewed to verify that the scale, site, materials and fenestrations proposed are in keeping with the existing fabric of the adjacent structures and/or any new construction occurring in the surrounding communities; and, that the design professional has determined that the height and/or massing of the building is in compliance with all building and zoning codes and regulations.

F. **Outline Specifications:** Reviewed to check that the notes on the drawings and the materials of the outline specifications are consistent with each other and are in compliance with the Design Handbook; that the materials and methods specified are reflected in the detailed cost estimate provided and are reflective of the approximate amounts of materials indicated; and that applicable hazardous material sections (such as lead based paint, asbestos and radon) are included.

G. **Detailed Cost Estimate:** Reviewed to verify that the items correspond to the work detailed on the drawings and indicated in the specifications; that the labor and material costs are reasonable for the amount of work shown and the location of the project; that the amount for general requirements, overhead and profit comply with program requirements; that the TCC costs per square foot and per unit are reasonable for the construction type and location of the proposed project. If the project is subject to a subsidy layering review, the general requirements, overhead and profit amounts may be further limited. If the building is impacted by SHPO requirements, costs for repairing the historic fabric must be incorporated into the estimate and if the project requires remediation of hazardous materials those costs are also to be incorporated into the cost estimate.

H. **Development Budget:** Reviewed to verify that the architect's fee is within the range of reasonableness for the scope of work proposed; that the total construction cost matches the cost shown on the detailed cost estimate; that all construction line items such as overhead, general requirements, profit, bond premium, site work, testing asbestos/LBP/soils, etc. are broken out and match the amounts represented in the detailed cost estimate; and, if the project has a non-residential component, to ascertain that the construction cost shown is representative of the amount of non-residential work to be constructed.

I. **Development Timetable:** The proposed time frames are reviewed for reasonableness based upon experience with previous similar projects; any required governmental approvals needed; and, the project applicant's and the architect's capacity, if known.

- J. **Zoning Compliance:** Reviewed to ensure that the project architect has complied with the existing zoning regulations and/or has filed for a variance if compliance cannot be achieved.
- K. **Site Photographs:** Reviewed to ensure that the height, size and character of the project are in keeping with the surrounding structures.

In addition to the above, HCR architects may conduct a site visit to ensure that all existing conditions noted in the application are, in fact, actual; that no hazardous materials are visible on or adjacent to the site; that there are no visible adverse environmental conditions; that the site is of appropriate size and has adequate road access; that utilities are adjacent to the site and are available from a public access; that the contours of the site are *buildable* with a minimum amount of cut and fill required; that, if a rehabilitation project, the building has not deteriorated beyond repair; that any replacement schedules for building systems are reasonable; and that the scope of work proposed can be accomplished within the confines of the site and/or building restraints.

### **3.01.01 Preliminary Design Documents**

The preliminary design documents are required to be submitted by the project applicant and architect as part of the application submission for project funding for HCR's review and approval. Architects are reminded that if they are designing a project for an applicant who is requesting HOME funds, project based Section 8 Housing Choice Vouchers subject to 24 CFR 983, or other applicable Federal funding; the project must comply with Section 504 of the Rehabilitation Act of 1973.

The following documents are to be submitted in Adobe PDF format with the on-line application and prepared by an architect or engineer licensed to practice in New York State. [Additional drawing types, such as full building sections may be submitted if required to convey the proposed design.](#) All drawings are to be of sufficient scale, resolution and clarity to be easily read on a [standard computer screen](#). Illegible drawings will be rejected and will result in a termination of the review. Drawing files are to be saved in a format to print on a maximum drawing sheet size of 24 by 36 inches.

#### **A. Site Plan:**

1. Draw site plan and floor plans in the same orientation;
2. Use a North arrow;
3. Show existing locations of building(s); roadway(s), parking area(s), utilities, plantings, etc.;
4. Show existing site restrictions including set-backs; rights of way, boundary lines, etc.;
5. Show all proposed changes to building(s) roadway(s), parking, utilities, plantings, etc.;
6. Show zoning classification; and
7. New York City projects must include zoning calculations;
8. Show notations of all new and existing materials
9. Show existing and proposed site slopes and approximate grade elevations.
10. Show boundaries of any unusual site features, i.e.: 100 year flood plain, wetlands, bedrock outcroppings, etc.

## B. **Floor Plan(s):**

1. Draw floor plans and site plan in the same orientation;
2. Use a North arrow;
3. Show all proposed changes to building components identifying removals and new construction;
4. Show room/space designation [and typical furniture layout \(for preliminary document submission only\)](#);
5. Provide a building code analysis indicating:
  - Occupancy classification
  - Construction type
  - Required set-backs
  - Fire area requirements
  - Tenant and other fire rated separation requirements
  - Exiting requirements
  - Fire Protection systems
6. Show building construction classification;
7. Show fire area allowances;
8. New York City projects must indicate which code and chapter the project is designed under;
9. Show gross building square footage and gross dwelling unit square footage;
10. Show general notes identifying all new and existing materials.
11. Show any deviations that were allowed by an official code variance.
12. In large buildings, include overall building plans at a smaller scale and individual apartment plans at a larger scale.
13. Indicate fire rated assemblies.

## C. **Elevations**

1. Show existing elevations of buildings (if applicable);
2. Show all new conditions of building exteriors;
3. Show general notes identifying all existing and new materials;
4. Show overall building height dimensions; and
5. Show finished floor height dimensions.

## D. **Exterior Wall Section**

1. Show construction system(s);
2. Show ceiling heights;
3. Show window heights (and floor to sill heights).
4. Indicate insulation R value.

E. Provide written specifications using the outline specification form attachment or the Construction Specification Institute's (CSI) format division of work items. List and describe all work to be performed and type of materials to be provided.

F. Provide a construction cost estimate prepared by a builder or construction estimator utilizing the cost estimate attachment forms by major trade items, including estimated costs of general requirements, builder's overhead and profit.

**Please Note:** All proposals must have a cost estimate prepared by a builder or construction estimator. HCR reserves the right to use an independent consultant to review and evaluate the reasonableness of the proposed construction costs. Consultant cost estimates that are more than five percent greater or less than those presented by a project applicant will be used in the final evaluation and may result in a change of rank due to adjustments in reevaluating scoring and feasibility.

### **3.01.02 Professional Agreements and Certifications**

#### **A. Owner/Architect Agreement**

For projects receiving construction financing from HCR administered programs. After a project has been selected for funding, the project applicant must submit a copy of the executed Owner/Architect Agreement. A & E staff reviews Owner/Architect (OA) Agreements for cost reasonableness and scope of work. Although no fixed fee scale is used for determining the architect's contract, a general rule of thumb that may be applied is a range of 5% to 15% of the estimated total construction cost, with 15% applying to small scale rehabilitation and/or historic preservation projects and 5% to large scale new construction projects. [See the applicable appendix section for Owner/Architect Agreement requirements.](#) All O/A Agreements in excess of \$25,000 must comply with the State's Equal Opportunity and Minority/Women Business Enterprises (M/WBE) requirements. The percentage of fee by design phase will be reviewed for compliance with the following schedule:

- Preliminary phase < 15% fee
- Design Development phase < 20% fee
- Construction Documents < 40% fee
- Bidding/Negotiating < 5% fee
- Construction Monitoring > 20% fee
- *Total Fee = 100% fee*

It is the project applicant's and architect's responsibility to ensure that the Agreement has the proper dates, names, project address(es), project description and authorized signatures.

#### **B. Owner/Architect Contract**

Submit an executed copy of the Owner/Architect contract at the time of funding award.

#### **C. Certifications**

The project applicant and architect will be required to certify to HCR/HTFC that plans and specifications comply with the Design Handbook's requirements, local government, State and Federal requirements including applicable environmental and applicable accessibility and adaptability requirements, at the time of each submission. (*See Appendix C for certification statement template.*)

#### **D. Construction Manager Agreement, if applicable**

If the use of a construction manager is planned, a Construction Management Plan must be submitted. The Plan must include the following:

1. The review process for selecting sub-contractors and suppliers;
2. The review process for compliance with Minority/Women Owned Business Requirements;
3. If applicable, the review process for compliance and staffing, to meet Federal Labor Standards (Davis-Bacon Related Acts) regulatory requirements.
4. The procedures and staffing capacity for monitoring the quality of construction work and progress; processing disbursements; processing and controlling change orders; controlling cost overruns; ensuring projects are completed in a timely manner.
5. The procedures and staffing capacity for conducting final inspections and ensuring project completion has satisfied all applicable requirements.
6. The financing available to cover all cost overruns and construction change orders.

If a Construction Manager is to be hired in lieu of a General Contractor for a project receiving construction financing from HCR administered programs; submit an unexecuted copy of the Owner/Construction Manager's Agreement.

## **3.02 Bid Documents**

Project applicants using a publicized competitive bidding process to procure a general contractor for the construction work of the project are required to submit bid documents to HCR for review and approval prior to requesting bids from contractors. [In addition to the documents described in 3.01.01, applicants shall include in their submission all documentation necessary to adequately detail the project for the bidders to evaluate and develop their bid.](#)

The specific due date for this submission will be established and will be made a condition of the Project's Funding Commitment Letter.

Project applicants applying with a builder/construction manager as part of their development team have guaranteed to HCR a fixed price contract for the total development cost of the project at the time of application for funding and are not required to submit bid documents for review.

## **3.03 Construction Documents**

### **3.03.01 Drawings and Project Manual**

Submission of drawings and project manuals are to be full size paper copies, limit drawing sheet size to a maximum of 24 inches by 36 inches. Submit full size paper copies of the construction documents.

In addition to [the documents](#), including the site plan, floor plan, elevations and wall section requirements, as outlined in Sections 3.01.01 [and 3.02 \(if applicable\)](#), the construction document submission is to include, at a minimum, but not limited to, the following:

#### **A. Site Plan(s)**

1. Draw site plans and floor plans in the same orientation.
2. Show all elevation changes; all drainage structures; and utilities. If public utilities are not available for a project and a well and/or leach field are proposed, provide a test well report showing: GPM, potability, local authority review report; and, soils percolation test report.
3. Show handicapped accessible parking, curb cuts, parking area striping, etc.
4. Show details of all new construction including sidewalks, paving, retaining walls, landscaping and plantings, utilities, fences, etc.

#### **B. Floor Plan(s)**

1. Draw floor plans and site plans in the same orientation.
2. Show exterior and interior dimensions of all new construction work including section, detail, elevation, window, door and room markers referencing work shown elsewhere; and, material and symbol key, abbreviation list, etc.

#### **C. Roof Plan(s) and Details.**

1. Draw roof plans, floor plans and site plans in the same orientation.
2. Show overall dimensions and dimensions for all roof structures (e.g., roof drains, hatches, smoke vents, parapets, vent pipes, ventilators, intake/exhaust shafts, chimneys, skylights, etc.).

3. Show all roof structures and note their material, type and fire-rating; show roof pitch and/or slope; all section and detail markers referencing work shown elsewhere.
4. Detail roof construction including all roof structures, flashing details, copings, etc.

**D. Exterior Elevations**

Show all new grade lines and elevation markers; all building section markers; window operation (if operable); foundation walls and footings below grade; and, all light fixtures, service connections, HVAC louvers or fan units and hydrants.

**E. Building Sections/Wall Sections**

1. Show all wall, floor, ceiling, foundation and roof components including structural members, fire rated assemblies, plumbing and heating piping and/or ductwork and specialty equipment (e.g.: elevators).
2. Indicate all dimensional heights indicating floor heights, ceiling heights, window and door openings, wall component dimensions, etc.
3. Show all detail markers referencing work shown elsewhere including notations indicating all materials and assembly instructions.
4. Indicate the R values of all insulation materials and methods of air sealing.

**F. Stair Plan(s), Sections and Details**

1. Provide a detailed section through the stair shaft showing all wall assemblies, floor assemblies and roof assembly.
2. Show details of stair landings, risers, treads, handrails, etc.; dimensions of overall floor to floor heights, stair landings, risers, treads, handrails, etc.; notations of all materials and fire ratings of all assemblies and smoke vent(s).

**G. Elevator Plans, Sections and Details**

1. Detail foundation and conditions at each floor level and at roof.
2. Show all fire stopping, fire rated construction and flashing.
3. Detail sump pit and provide notations for all materials and components.

**H. Interior Elevations**

Indicate all complex major components (i.e., kitchen cabinetry); show all cabinets, heights, soffits, sinks, appliances, countertops, lighting and any special features; show dimensions for all critical heights; indicate special details such as handicapped accessibility requirements; and provide notations for all materials.

**I. Door Schedule, Types and Details**

1. Indicate door height, width, thickness, material, door type, louvers or glazing, if any, frame type, frame material, and fire rating, if any. Hardware schedule may be included on door schedule or in specifications.
2. Show door types, dimensioning all locations of louvers and/or glass panels.
3. Detail all door type conditions at head, jamb and sill.
4. Provide notations and dimensions for all materials and components.

**J. Window Schedule, Types and Details**

1. Schedule should show window type, height and width for unit dimensions and height and width for rough opening or masonry opening.
2. Detail all window type conditions at head, jamb and sill.
3. Provide notations and dimensions for all materials and components.

**K. Finish Schedule**

Show room name, and number; base material; floor material and finish; wall material, finish, and orientation (North, South, East and West); ceiling material, finish and height.

**L. Miscellaneous Details**

Furnish, as required, clarification for all construction components.

**M. Structural Plans and Details**

1. For multiple dwellings requiring new foundation work, provide a soils test report.
2. Show notation of materials, dimensions and section and detail markers.
3. For structural details, show all connections with wall assemblies, floor and roof assemblies, notations of materials and dimensions.

**N. Heating, Ventilating and Air Conditioning (HVAC)**

For floor plans show location of all HVAC equipment including exhaust fans, grilles, registers, furnace/boilers, fin tube radiation, ducts, supply and return piping, fire-dampers, valves, tanks, service connections, etc.; notation of all materials, sizes of all components; schedule of HVAC equipment; and heating riser diagrams for piped heating systems and symbol legend.

**O. Plumbing**

1. For floor plans, show locations of all plumbing equipment including plumbing fixtures, supply and return piping, valves, gates, tanks, heaters, connection to main service, etc.; notation of all materials and sizes of all components.
2. Provide riser diagram(s) as necessary to show all piping connections, vent pipes, water and sewer connections, fixture connections, traps, valves, etc.; notations of all materials; plumbing fixture schedule and symbol legend.

**P. Electrical**

1. For floor plans show locations of lighting, power, wiring connections, panel boxes, telephone connections, transformers, etc.; notations of all materials; and sizes of all light fixtures, panel boxes, equipment.
2. For site plan show locations of all lighting, outside outlets, pad mounted or buried transformers, pull boxes, wiring, connections to existing utilities.
3. Provide a lighting schedule and symbol legend.

**Q. Project Manuals**

In addition to the construction drawings, the Project Architect must prepare a manual containing the following information:

1. All pertinent information regarding the construction of a project must be bound together into a Project Manual. At a minimum, the Project Manual must contain the following *front end* documents: all required bidding information including, if applicable, the Federal Labor Standards regulatory requirements' (Davis-Bacon Related Acts) labor standards clause for the program and proposed wage rate; proposed AIA Owner/Contractor Agreement including the provisions outlined in Appendix E; HTFC's Contractor's Assurances Agreement (See HTFC Legal Documents Manual) and the written specifications.
2. All projects must provide an NYS HCR Project Sign as indicated on the HCR website. This information should be incorporated into Part I - General Requirements of the bid documents, unless other arrangements for its procurement have been made by the applicant.

3. Written specifications must contain written descriptive detailed account of all product and work to be performed as indicated elsewhere in the bid documents. Organize all information using the Construction Specification Institute (CSI) Section Format as established by the three basic specification section parts:
  - Part 1, General: Defines the specific administrative and procedural requirements unique to the section.
  - Part 2, Products: Describes, in detail, the quality of items that are required for incorporation into the project under the section.
  - Part 3, Execution: Describes, in detail, preparatory actions and how the products are to be incorporated into the project.

Bind all specifications and required *front end* documents into a Project Manual whose title shall include the following information:

- Name of applicant/owner;
- Name and location of project site;
- HCR/HTFC (SHARS ID) number;
- Name of the architectural firm; and
- Architectural firm's address and telephone number.

### **3.03.02 Cost Estimate**

Bid document phase cost estimate by major trade items, including estimated costs of general requirements, builder's overhead and profit.

### **3.03.03 Government and Environmental Approvals**

- Submit documentation from the State Historic Preservation Office, indicating the final determination/conditions for the project, if not previously submitted.
- Submit documentation from the municipality, indicating compliance with the State Environmental Quality Review process, if project is classified as a Type I action.
- Submit any Federal, State or local permits or other approvals required to comply with environmental regulations.
- Submit documentation and written approval from the Code Review Board of any variances from building code requirements.

## **3.04 Contract Documents**

The contract documents which include the construction documents as enumerated in [3.02.03](#) are required to be submitted by the project applicant and the project architect for OFD's review and approval prior to a construction loan closing. The specific due date for this submission will be established and will be made a condition of the project's funding commitment. The following contract documents are required:

- A. All Projects:
  1. Two complete sets of construction documents sealed by the project architect, including all trades, approved by the local building department having jurisdiction over the project.
  2. An enumeration of documents which is to include all drawings, specifications and addenda with the most current revision date.

3. Submit a copy of the Owner/Contractor agreement which is to reference the above enumeration of documents. In addition, provide documentation that the contract meets the requirements of the Capital Programs Manual Section 5.12.05. Such documentation shall identify major subcontractors and suppliers by trade and the cost of their work.
- B. For projects receiving construction financing from HCR administered programs:
1. A bid tabulation showing that a minimum of 3 qualified contractors submitted bids for the proposed project and an indication of which bidder has been selected for contract award. (If the applicant has selected a contractor that is not the *apparent low bidder*, written justification for such a selection must accompany the submission.) If the project is to be managed by a construction manager or if the builder has been pre-selected at the time of application, submit a list of all bids received from all major sub-contractor(s) and suppliers', indicating which bidder has been selected.
  2. A copy of the selected contractor's trade payment breakdown showing the contract amount for each major trade as outlined by the specification, or by each subcontractor and supplier.
  3. An executed copy of the Owner/Contractor's agreement, with all applicable information and attachments completed and included.
  4. A copy of the Contractor's 100% Payment and Performance Bond.
- C. Two copies of the building permit for the project.

### **3.05 Construction Administration**

Please refer to the Capital Programs Manual, Section 6.00 which describes the general construction processing procedures and requirements; the roles and responsibilities of the project participants; the procedures for change orders, budget modifications, award increases and escrow accounts; the disbursement process; and the requirements for inspections, cost certification and project closeout.

- A. Final as-built drawings must comply with the following:
1. Final submission of as-built drawings shall be submitted either printed on mylar sheets; or on bond paper suitable for permanent storage plus three copies of the documents on CDs (compact disks) submitted in Adobe PDF format. A preliminary submission of the final drawings printed on bond paper may be submitted for review prior to producing the final as-built set. Drawings submitted on CDs must comply with the following:
    - Include a generic text file document which explains the contents of the disk and the format of the drawing files.
    - Save files in folders and with file names which correlate to the printed documents.
    - Save drawings files in a format which matches the final version of the printed drawings. Provide only information relevant to the each drawing and do not include extraneous information and details which are not included in the final documents.
  2. Label all drawing sheets with an as-built drawing title and final date. Any sheets with no changes are to have a statement added that no changes have been made from the original drawing sheet.
  3. Drawings shall consist of a reproduction of the complete contract drawings updated to reflect changes made during the construction of the project and with added information, as necessary, to explain aspects of the project in further detail than in the contract set.
    - a. Add details to the contract set of drawings issued during construction by the project architect for change orders and supplementary instructions.

- b. Add sheets which include shop drawings, manufacture data, or details from product submissions issued during construction which explains this information in better detail. (Boilers schematics of controls & piping are a good example of this).
  - c. Update the drawing index to denote changes made by adding or deleting drawings from the original contract drawings.
4. Insure that special attention is given to explain locations, with dimensions, of buried utilities & structures, utility valves & shut-offs, electrical controls, and other maintenance devices.
  5. Drawings shall be submitted with a cover memo from the project architect stating that he/she has reviewed the set and is satisfied that the set is complete and that included information is well coordinated without inaccuracies or confusing duplications.

B. Warranties must comply with the following:

1. All components and building systems to have a minimum of one year materials and labor warranty.
2. All warranties and guarantees listed in the project specifications that have a warranty period greater than one year must be submitted at the project close out. The following items, although not entirely inclusive, must be submitted: Roof; doors; door hardware and accessories; windows; flooring; specialties; mechanical systems; electrical systems; and plumbing.
3. Submit two copies of the warranty submission bound and tabbed, or include as PDF files on each as-built drawing CD-ROM.

C. Other submissions:

In addition to the above, provide copies of the following prior to project closeout at construction completion:

1. Third party clearance reports and testing result summaries for hazardous material mitigation applicable to the project, such as:
  - Closed building radon testing performed prior to occupancy;
  - Asbestos clearance report(s);
  - Lead based paint clearance or abatement report(s);
  - Other mitigated hazardous conditions, such as: mold mitigation, removal of underground petroleum or other hazardous material storage tanks, etc.
2. Final Certificate(s) of Occupancy
3. Project architect's Certificate of Substantial Completion (AIA.G704)
4. Project architect's Certification in accordance with Appendix C.
5. Contractor's Affidavit of Release of Liens (AIA.G706)
6. Contractor's Affidavit Payment of Debts and Claims (AIA.G706A)
7. Final summary report by the green building consultant certifying compliance with applicable green building criteria.
8. Final summary report by the energy consultant certifying compliance with applicable energy efficiency criteria.

D. Building Systems

It is strongly recommend to record and provide videos of training sessions for HVAC and other building systems for the use of building maintenance staff.

# Section 4 .....

## *Design and Specification Requirements*

Office of Finance and Development has developed design and specification requirements to ensure minimum standards of quality for function and durability. HCR architects will review all submissions for compliance with the requirements contained herein. Any proposal not meeting these minimum standards will not be recommended by HCR architects for further processing.

Minor deviations from these requirements will be allowed if they are necessary to avoid costly structural changes in rehabilitation projects or if they result in a superior design solution. These requests will be reviewed on a case-by-case basis, by the Assistant Commissioner of the Office of Finance and Development, who may consider waiving a requirement based upon the project applicant's ability to demonstrate one of the following:

- Cost-effectiveness of the alternate solution
- Functional appropriateness of the alternate solution
- Durability and operating appropriateness of the alternate solution.
- Impacts on operating costs/efficiency which will also be reviewed by the Underwriting Unit.

All waiver requests must be in writing and must be presented to Office of [Finance and Development](#) 60 days prior to each required submission.

Once a design is approved, there will be no substitutions. A waiver process will be available if the waiver request is submitted at least 60 days prior to submission of contract documents.

### **4.01      *Applicable Programs and Housing Activities***

The design and specification requirements contained herein apply to all projects applying for funding administered by HCR or HTFC except as noted below:

- Housing Development Fund (HDF);
- Low-Income Housing Credit Program (LIHC) (See special requirements in CPM);
- Rural Rental Assistance Program (RRAP);
- HOME Program: [Local Program Administrator awards](#);
- RARP, UI

In addition, all HOME-funded projects must comply with the U.S. Department of Housing and Urban Development's (HUD) Section 8 Housing Quality Standards (HQS). Copies of HQS can be obtained from the U.S. Department of Housing and Urban Development, Jacob K. Javits Federal Building, Room 3200, 26 Federal Plaza, New York, New York 10278-0068, Telephone (212)264-0777, Extension 3701.

#### ***Projects with NYC HPD Involvement:***

All projects located within New York City that involve the City of New York Department of Housing Preservation and Development (HPD) funding, site control and approval must also comply with HPD's applicable ***Design Guidelines for Housing***. Copies may be obtained by contacting: NYC Department of Housing Preservation, Division of Architecture and Engineering, 100 Gold Street, New York, New York, 10038, telephone (212) 978-6326.

## 4.02 **Applicable Codes, Regulations and Laws**

The purpose of this section is to establish minimum requirements for the development of low-income housing projects funded under the Housing Trust Fund Corporation or the Division of Housing and Community Renewal. These requirements are not intended to supersede the requirements of any other laws, rules or regulations of any other agency having jurisdiction.

In addition, where applicable, all projects must comply with:

1. NYS Uniform Fire Prevention and Building Code, or in New York City: the New York City Building Code;
2. Energy Conservation Construction Code of New York State, or in New York City: the Energy Conservation Code of New York City;
3. Multiple Dwelling Law;
4. New York State Labor Law, Industrial Code Rule 56;
5. Federal Fair Housing Act;
6. Section 504 of the Rehabilitation Act of 1973.(applies to projects funded with HOME funds-refer to Appendix G) and;
7. Federal Labor Standards regulatory requirements (Davis-Bacon Related Acts).

### 4.02.01 **Accessibility**

The New York State Homes and Community Renewal and The Housing Trust Fund Corporation has adopted the following definitions relating to accessibility, adaptability, visitability. HTFC/HCR encourages developers of affordable housing to initially adapt as many units as possible.

- A. **ACCESSIBLE** when used with respect to the design, construction, or alteration of an individual dwelling unit, means that the unit is located on an accessible route and when designed, constructed, altered or adapted can be approached, entered and used by individuals with physical disabilities. A unit that is on an accessible route and is adaptable and otherwise in compliance with the applicable standards set forth in the Building Code of New York State, New York City Building Code, Section 504 of the Rehabilitation Act of 1973, the Federal Fair Housing Act and their respective regulations and guidelines is accessible within the meaning of this paragraph.
- B. **ACCESSIBLE ROUTE** means a continuous unobstructed path connecting accessible elements and spaces in a building or facility that complies with the space and reach requirements of applicable standards prescribed by the Building Code of New York State, New York City Building Code, Section 504 of the Rehabilitation Act of 1973 and the Federal Fair Housing Act and their respective regulations and guidelines.
- C. **ADAPTABLE** means the ability of certain elements of a dwelling unit, such as, but not limited to, kitchen counters, sinks, and grab bars, to be added to, raised, lowered, or otherwise altered, to accommodate the needs of persons with or without disabilities, or to accommodate the needs of persons with different types or degrees of disability. The adaptation of an element shall require no special knowledge or tools and shall be accomplished with no structural change. For example, in a unit adaptable for a hearing-impaired person, the wiring for visible emergency alarms may be installed but the alarms need not be installed until such time as the unit is made ready for occupancy by a hearing-impaired person.
- D. **VISITABILITY** – shall mean that a residential unit includes the provision of at least one accessible, grade level entry on an accessible route (no stepped entry and no elevated ramps), a 36 inch or greater clear circulation path through the first floor of the unit, including all interior doorways, and at least, a half-bath on the first floor with a 30 inch by 48 inch clear floor area to accommodate a person in a wheelchair and allow that person to close the door.

Notwithstanding the foregoing, a dwelling unit that contains all necessary components and clearances required by the applicable building code for an accessible dwelling unit on an accessible route shall be considered to meet the visitability circulation requirement.

These standards shall apply to all first floor residential units in all new construction projects without an elevator, all residential units in new construction with an elevator, and as many units as feasible in an adaptive reuse or rehabilitation project.

#### **4.02.02      *Variances***

Any proposed variances from code requirements or local zoning ordinances must be submitted concurrently to OFD and the applicable governmental review agency. Written governmental approval of any variances must be submitted by the project applicant with the Bid Document submission.

#### **4.02.03      *Environmental Review***

In accordance with requirements of 6NYCRR Part 617, the State Environmental Quality Review Act (SEQRA), HTFC must conduct an environmental review of all funded capital projects. In addition, any projects that receive federal funding through HTFC, for example the U.S. Department of Housing and Urban Development (HUD), must also be reviewed under the requirements of 24 CFR Part 58, the National Environmental Policy Act (NEPA). The HCR Environmental Analysis Unit (EAU) is responsible for conducting environmental reviews for HTFC.

All project awardees will be required to submit a Phase I Environmental Assessment (ESA) report which must meet, at a minimum, the American Society for Testing and Materials standard for site assessment (ASTM E 1527-05). The Phase I ESA will not be accepted if it was not completed within one year of the date of the application for funding. An update to an older Phase I report will be accepted. The scope of the investigation must include visual examination of suspected asbestos-containing materials, lead-based paint and mold contamination.

The applicant will be responsible for submitting additional studies, documentation and further investigations as requested. HTFC will require any significant environmental impacts identified in their review to be mitigated as a condition for proceeding with project construction.

Depending on the project, applicants may be asked to submit documentation that demonstrates that the project complies with the other state and federal entities that may have jurisdiction over the project. Although not exhaustive, a list of these entities might include:

1. NYS Smart Growth Public Infrastructure Policy Act
2. NYS Office of Parks, Recreation and Historic Preservation (OPRHP)
3. NYS Department of Environmental Conservation (DEC)
4. NYS Department of State (Waterfront Revitalization and Coastal Resources Act)
5. NYS Department of Labor (DOL)
6. NYS Natural Heritage Program (Endangered Species)
7. NYS Department of Health (DOH)
8. New York City Environmental Review Board (CEQR)
9. NYS Department of Agriculture and Markets (Agricultural Districts)
10. Adirondack Park Agency (APA)
11. U.S. Fish and Wildlife Service (Endangered Species)
12. U.S. Department of Housing and Urban Development
13. U.S. Environmental Protection Agency (EPA)
14. U.S. Army Corps of Engineers (Wetlands)
15. U.S. Occupational Safety and Health Administration (OSHA)

#### **4.02.04      *Lead Based Paint***

Projects involving the rehabilitation of buildings constructed prior to 1978 must comply with HUD rules and guidance for testing and abatement of lead-based paint. Refer to Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing (HUD-1539-LBP, [Second Edition, July, 2012](#) and 24 CFR Part 35) and the EPA renovation, repair and painting rule (40 CFR Part 745). Provide certified third-party clearance examination reports for: each work area to demonstrate that the hazard reduction activities are complete; and, at the completion of the project, prior to occupancy, to demonstrate that no soil-lead hazards or settled dust-lead hazards exist.

#### **4.02.05      *Mold***

Where mold is identified prior to, or during the construction or rehabilitation of any project, the project must comply with New York City "Guidelines on Assessment and Remediation of Fungi in Indoor Environments," as published by the New York City Department of Health and Mental Hygiene.

An independent certified industrial hygienist, retained by the project owner, must prepare a mold remediation report, including a plan for future maintenance, and certify that the remediation work has been successfully completed.

#### **4.02.06      *Radon***

For new construction projects in EPA Zone 1 and 2 areas, install passive radon-resistant features below the slab along with a vertical vent pipe with electrical junction box(es) available, if an active system should prove necessary. The passive radon-reduction system shall be activated should tests confirm the presence of radon gas in the building. For rehabilitation projects, install an active radon-reduction system and measures should test confirm the presence of radon gas in the building exceeding the EPA action level (in EPA Zones 1 and 2). Tests prior to rehabilitation work are only valid if such tests are conducted in an environment which is representative of the conditions which will be present in the completed building.

See ASTM E1465 and E2121 (latest editions) for guidance.

### **4.03   *Design Requirements***

#### **4.03.01      *Exterior Design Requirements***

1. [Building design, material selection and details must promote the following:](#)
  - a. [Compatibility with and enhancement of the neighborhood context and natural environment.](#)
  - b. [Maximization of energy efficiency, and minimization of negative environmental impacts.](#)
  - c. [Material and details shall be selected for maximum durability and the minimization of ongoing maintenance.](#)
2. Building facades that face the street, or have a prominent [exposure](#) to other public areas, must include design measures that increase the building's aesthetic appeal [and enhance and reinforce existing design qualities found in the neighborhood.](#) [Examples of such measures include:](#)
  - a. Articulation of the building facade using forms such as porches, terraces, bay windows, dormers, pilasters or other building setbacks, and

- b. Architectural details such as brackets, banding, railings, chimneys, entry columns or shutters which must be **designed** to be compatible with the **quality architectural aesthetic of the predominant** buildings in the neighborhood, and
  - c. Roof shapes for sloped roofs, such as hips, gables, or cupolas that are visually appealing and compatible with the better buildings in the neighborhood context. For buildings with flat roofs provide a parapet with coping and cornice.
- 3. **Buildings with lengthy corridors should be avoided, especially in non-urban settings. Wherever possible configure family housing as low-rise buildings utilizing individual exterior dwelling unit entries or buildings with clustered/central core dwelling unit entries.**
- 4. **The primary exterior envelope for buildings located in densely populated urban areas shall be masonry, however, durable alternatives, such as high performance panels, may be considered. Criteria include:**
  - a. Where the immediate neighborhood context is masonry, provide masonry for the full building height at all elevations **exposed to public view or subject to abuse.**
  - b. **At all other** urban areas, provide masonry at all grade level stories, **except for projects of three stories or less.**
- 5. Provide landscaping that enhances the building, including indigenous shrubs, berms, decorative fencing, special lighting and signage. For senior projects shade trees must be provided.
- 6. Provide screening for all exterior mechanical equipment, meters, dumpsters & etc.
- 7. Commercial signage, installed by either the project owner or **non-residential** tenants, must be compatible with the building design and consistent in size, lettering, shape and color.

#### **4.03.02 Shared Common Space**

**Residential space** is defined as space provided for the exclusive rights of the tenant or homeowner including shared common space in multiple dwelling buildings (i.e., hallways, stairways, lobby, mailroom, trash room, manager's office, laundry room, community room, etc.).

**Non-residential space** is defined as any space that is not for the exclusive use of the residents such as civic space, commercial space, public day-care centers, organizational offices, training rooms, counseling offices, etc.

- 1. **All Projects:**
  - a. Developments that include non-residential space **as defined above must comply with the following provisions:**
    - i. **The general public must be able to access** the non-residential space directly from the exterior without **passing** through the residential portion of the project.
    - ii. **Uncontrolled** access between the residential and non-residential space is not allowable.
    - iii. **Utility costs for residential and non-residential spaces must be separated;** examples include separate HVAC systems with separate boilers/AC **equipment**, separate electrical systems, separate domestic hot water systems, etc., **with separate utility meters or other measuring equipment to determine usage attributable to non-residential spaces.**
    - iv. The construction costs for non-residential space must be funded by non-residential funding sources and must include prorated portions of the shared systems such as the foundation, the roof, structure, utilities, etc.

- b. Residential shared common space must be less than 25% of the total residential space.
  - c. The lobby area must have clear sight lines to the elevators/stairways, manager's office and mailboxes.
  - d. Public corridors must have clear sight lines to stairways/elevators.
  - e. Laundry Requirements
    - i. Centrally located laundry rooms are required in all rental projects. Laundry facilities shall be available for extended hours. When located in detached facilities an exterior covered entry with 24 hour keyed access for tenants is preferred. All laundry facilities shall be located on an accessible route and include a fixed counter, meeting accessibility standards, for folding clothes.
    - ii. Provide a common laundry room with one commercial washer and one commercial dryer for every twenty bedrooms. In no case will the project be required to provide more than 1 washer/dryer for every 10 dwelling units. This ratio may be reduced by one half if washer and dryer hook-ups for side-by-side appliances are provided in all dwelling units of family projects. For multi-site one and two family units, washer and dryer hookups in each dwelling unit may be provided instead of a central laundry room.
  - f. Elderly housing projects, for persons 55 years of age or older, having two or more floors, must have an elevator.
  - g. Individual garages and carports attached to dwelling units are not allowed in HTFC projects, except those located in unused basement space available due to the existing topography of the site.
  - h. Detached common use garages and carports are not fundable by programs administered by the HTFC.
  - i. Fireplaces are not fundable by programs administered by HTFC funding.
2. **Projects having 20 or More Dwelling Units:**
- a. Provide a community room based upon 15 square feet per dwelling unit up to a maximum of 750sf. Each community room is to have additional accessible space for a kitchenette with cabinets, counter top, refrigerator, a sink and an optional residential style kitchen range.
  - b. Provide a janitor's maintenance closet with slop sink is required on every floor of buildings with corridors serving more than 8 dwelling units.
  - c. Provide a trash collection room or trash compaction system must be provided on every floor of buildings with corridors serving more than 8 dwelling units.
  - d. Provide recycling collection rooms configured to accommodate local collection services.
  - e. Bicycle storage facilities are encouraged for all projects located in the City of New York and at family projects located elsewhere

**4.03.03 Dwelling Unit Space**

A **dwelling unit** is defined as the private space provided for the exclusive rights of a tenant or homeowner consisting of a bathroom, kitchen, bedroom/living/dining room area. All substantial rehabilitation and newly constructed dwelling units must meet the minimum gross square footage enumerated below and cannot be larger than the maximum square footages:

Dwelling Unit Type	Minimum Area	Maximum *
0 Bedroom/Studio-	450 sq. ft.	550 sq. ft.
1-Bedroom-	600 sq. ft.	725 sq. ft.
2-Bedrooms-	750 sq. ft.	950 sq. ft.
3-Bedrooms- w/additional one half bath	900 sq. ft.	1,150 sq. ft.
4-Bedrooms- w/additional full bath	1,050 sq. ft.	1,300 sq. ft.
5-Bedrooms- w/additional full bath	1,200 sq. ft.	1,450 sq. ft.

\* Refer also to note 3 below and to section 4.03.03.F.5. (Storage Areas)

See Section 4.01 for additional requirements for projects involving NYC HPD.

1. Gross square footage is defined as the area contained within exterior wall surfaces and/or centerline of common wall(s) separating adjacent common space and/or dwelling units(s)
2. Unit sizes may be increased by 50 SF in non-accessible units to accommodate visitability
3. For dwelling units located on more than one level, up to 60 square feet per floor may be added to account for stairs.
4. All habitable rooms in new buildings shall have maximum ceiling heights of 9 ft.-0 in.
5. Unit occupancy is based upon two persons per bedroom.
6. All habitable rooms must have natural light (minimum of 8% of floor area) and natural ventilation (minimum of 4% of floor area).
7. Porches, balconies and patios associated with Accessible and VISIBLE dwelling units must be on an Accessible Route, and must be in compliance with applicable Accessibility standards and meet HCR Visitability standards.

**A. Living Room**

Provide adequate wall area in living room to allow for the placement of furniture based upon the maximum allowable number of unit occupants.

**B. Dining Room**

Provide adequate floor area to accommodate a table and chairs to seat the maximum allowable number of occupants.

**C. Kitchen/Kitchenette**

1. Each kitchen shall be separated from other areas with a 12 inch dropped header, except where this would result in a soffit less than 6'-8" above the finished floor; in such cases, provide a dropped header as deep as possible without encroaching on the minimum clear height required. Kitchens shall be equipped with a range/oven, vented exhaust fan, refrigerator, sink, base and wall cabinets. The following minimum lineal foot of countertop space and shelving shall be provided:

Dwelling Unit Type	Minimum Counter Top	Minimum Shelving
0 Bedroom/Studio	4.5 lineal ft.	25 lineal ft.
1-Bedroom	5.0 lineal ft.	30 lineal ft.
2-Bedrooms	6.0 lineal ft.	35 lineal ft.
3-Bedrooms	7.0 lineal ft.	40 lineal ft.
4-Bedrooms	8.0 lineal ft.	50 lineal ft.
5-Bedrooms	8.0 lineal ft.	50 lineal ft.

2. Each kitchen shall have a minimum of three cabinet drawers. A minimum of 18 inches of counter space shall be adjacent to both sides of the sink and at least one side of the refrigerator and range. Place ranges within counter runs; do not place ranges against sidewalls, **unless non-combustible surface is provided, and applicable accessibility standards are maintained.** Do not leave sides of ranges exposed.
3. The minimum aisle width between cabinets shall be 42 inches.
4. Where possible, kitchens and bathrooms should share common supply, waste, and vent stack piping.

**D. Bedrooms**

1. The primary bedroom must have minimum dimensions of at least 10 feet by 10 feet; secondary bedrooms must be a minimum of 80 square feet.
2. Every bedroom must have a closet with a shelf, closet rod and a door.
3. Every bedroom must be of sufficient size to accommodate a bed, storage chest, night table, chair, and circulation space.
4. All bedrooms must have a 2-8 inch or larger door unit with a privacy lock set.

**E. Bathrooms**

1. Every unit must have a bathroom containing a bathtub unit with shower head, a sink, a wall 30" tall mirrored medicine cabinet and a toilet. Every three-bedroom unit must have an additional bathroom containing a sink, mirror and a toilet. Every unit having four or more bedrooms must have a second full bathroom, although a shower unit may be substituted for a tub/shower unit in the second bathroom.
2. Provide wall reinforcement/blocking for mounting future grab bars at all accessible, adaptable and visitable locations.
3. All bathrooms must have a 2-6 inch or larger door unit with a privacy lock set.
4. All bathrooms must be mechanically ventilated.
5. Windows must not be located within the tub/shower surround.
6. Bathrooms must be accessible from within the dwelling unit and without traveling through the kitchen, living room or dining room.
7. Whirlpool baths or spas and residential washers and dryers are not fundable by programs administered by HTFC

**F. Storage Areas**

1. Each dwelling unit entry area must have a storage closet for outerwear with the following minimum square foot floor area:

Dwelling Unit Type	Entry Area Storage Closet, Min.
0 Bedroom/Studio	6 Sq. Ft.
1 and 2 Bedroom	8 Sq. Ft.
3-Bedroom	10 Sq. Ft.
4-Bedroom	12 Sq. Ft.
<b>5 Bedroom and larger</b>	<b>14 Sq. Ft.</b>

2. Every bedroom must have a clothes closet with the minimum dimensions of 2 feet, 0 inches by 4 feet, 0 inches wide.
3. Every dwelling unit must contain a storage closet for linens with 6 linear feet of shelving with minimum dimensions of 1 foot, 6 inches deep and 2 feet, 0 inches wide.

4. Additional bulk storage must be provided for each dwelling unit as follows:

Dwelling Unit Type	Bulk Storage Minimum
0 Bedroom/Studio	10 Sq. Ft.
1 and 2 Bedroom	20 Sq. Ft.
3-Bedroom and larger	25 Sq. Ft.

Bulk storage located in basements or other areas subject to high ambient moisture or humidity shall be waterproofed, ventilated and dehumidified to prevent damage to stored items.

In areas where basements cannot be provided due to high water tables, poor soil conditions, or rock that cannot be cost effectively excavated, and are governed by a zoning ordinance floor area ratio or other local zoning restrictions, that would result in the loss of dwelling units as a result of complying with this storage requirement, the HTFC will consider requests for waivers.

- 5. Dwelling unit sizes may be increased to accommodate bulk storage space located within the dwelling unit.
- 6. All bulk storage closets [outside of dwelling units](#) must have doors with locking hardware.

## **4.04 Specification Requirements**

### **4.04.01 General Requirements**

The definition for **general requirements** is all project specific expenses that are borne by the general contractor, including but not limited to: supervision (including project scheduling, project meetings, submittals); field engineering; field office expenses; temporary facilities; temporary utilities; cleaning and rubbish removals; temporary security; project sign; and project closeout. For general requirement costs allowances refer to Section 2.02.

**Note:** Builder's overhead is a separate line item from general requirements and includes the administrative office expenses of the contractor as they relate to the general management of the project. These may include, but are not limited to: payroll and accounts; general office telephone charges; rental or mortgage cost of operating a construction office; utilities of the main office; administrative staff salaries; MBE/WBE processing; and Davis-Bacon wage compliance.

### **4.04.02 Sitework**

- A. Provide a minimum 4-inch base of compacted, sound, granular, durable material, free from organic materials, beneath all exterior driving or walking surfaces.
- B. Asphalt paving must be a minimum of 2" in thickness and compacted with a 10 ton roller. Provide positive drainage of all driveways, parking areas, ramps and walkways to prevent standing water.
- C. When a parking area abuts an accessible sidewalk, wheel stops or a curb must be provided to prevent the vehicle from overhanging the sidewalk and obstructing the accessible route.
- D. Provide benches at multifamily projects. Provide benches with backs at senior projects. Exterior seating must be of durable, low maintenance materials. Assemblies of concrete, wood and/ or metal are acceptable if manufactured for the intended purpose. Exterior seating, and other amenities must be permanently anchored in place.
- E. Projects with accessible dwelling units or other accessible uses must include at least one paved accessible wheelchair area with benches.
- F. Provide playgrounds in accordance with Section 1.02.01.C.6.
- G. Plant material must be indigenous or non-invasive to the climate and area, non-poisonous, and be selected to minimize water usage and maximize energy efficiency.
- H. Trees at streetscape must be at least 2-1/2 inch caliper. Trees sited for building landscaping must be at least 1-1/2inch in caliper.
- I. All primary walkways, sidewalks from parking areas, and sidewalks to secondary entrances must be concrete.
- J. Ornamental fences are to have horizontal top bars with no pickets projecting above the bar. Wood picket fences are to have flattened tops or a horizontal cap above the pickets.

### **4.04.03 Concrete**

- A. Provide a chemical hardener and sealer to all troweled finished interior floors which are to be left exposed.
- B. Provide a non-skid finish to all concrete walkways and pitch to avoid ponding.
- C. All concrete exposed to weather must have a minimum ultimate design strength of 4000 psi and contain an air entrainment admixture. Concrete walkways must be reinforced and have a non-skid finish.
- D. All interior concrete must have a minimum ultimate design strength of 3,000 psi.

### **4.04.04 Masonry**

- A. Provide brick masonry units of SW grade meeting ASTM-C-216 standards.
- B. Provide adjustable unit type wall ties of a non-corrosive material.

- C. For all masonry cavity walls provide [weep holes above the](#) base flashing at the bottom of wall cavities and above all other flashing locations. Flashing material [and](#) location, and spacing of weep holes shall be in accordance with Brick Institute of America requirements.
- D. Provide control joints in all masonry walls no less often than every 50 feet. Locate all control joints at points of natural weakness in the masonry work.

#### **4.04.05      *Metal***

All steel work must conform to the following standards:

- Code of Standard Practice for Steel Buildings and Bridges by the American Institute of Steel Construction (AISC Code), latest edition.
- Structural Welding Code - Steel, AWS D1.1, by the American Welding Society (AWS Code).
- Comply with the appropriate specifications, *SSPC SP-X* by the Steel Structures Painting Council.

#### **4.04.06      *Wood***

- A. All wood siding applications must be free and clear of knots, checks and other defects.
- B. All wood exposed to the weather and wood blocking used in roofing must be pressure treated.
- C. For buildings utilizing wood roof trusses spaced at 24 inches on center H clips must be used with a minimum of 5/8 inch thick plywood roof sheathing. All roof sheathing is to have an exposure 1 classification. Non-plywood sheathing panels may be utilized if the entire panel is water resistant, carries a manufacturer's warranty not to delaminate, [have excessive swelling](#) or require sanding due to moisture absorption during installation and is installed in compliance with this warranty. In addition, the sheathing panels must carry a transferrable 50 year manufacturer's warranty.
- D. All floor sheathing must be a minimum of 3/4" tongue and grooved plywood. All floor sheathing to have an exposure 1 classification. Non-plywood sheathing panels may be utilized if the entire panel is water resistant and carries a manufacturer's warranty not to delaminate, [have excessive swelling](#) or require sanding due to moisture absorption during installation and is installed in compliance with this warranty. In addition, the sheathing panels must carry a transferrable 50 year manufacturer's warranty.
- E. Underlayment must be in conformance with the floor finish manufacturer's acceptable standards.

#### **4.04.07      *Thermal and Moisture Protection***

- A. For all construction/rehabilitation projects, provide R and U values that comply with [the Energy Conservation Construction Code of New York State](#) or [Energy Conservation Code of New York City](#), latest edition, [as applicable](#). Submit thermal rating documentation for the walls, roofs, windows, doors, perimeter slabs, basements, HVAC, lighting, etc.
- B. New roofing systems are required on all projects.
- C. Non-urban units, and low-rise multi-dwelling buildings (2-3 stories i.e., row houses, garden apartments) must have pitched roofs with a minimum roof pitch of 5/12, or greater to or match those of existing surrounding residential structures.
- D. For low slope roofs, provide single ply EPDM, single ply PVC, single ply Hypalon roofing membranes or modified bitumen.
- E. Provide pressure treated wood nailers and curbing.
- F. All low slope roofing systems must provide a 15-year, full systems manufacturer's warranty for labor and materials with no dollar limit. In addition, the roofing contractor is to provide a minimum two-year, labor warranty for all roofing and sheetmetal work.
- G. For all shingle roofing, provide a minimum manufacturer's warranty of 30 years and a two-

- year roofing contractor's labor warranty for all roofing and sheetmetal work.
- H. For all metal roofing, provide a minimum of a 50 year manufacturer's warranty and a two-year roofing contractor's labor warranty for all work.
  - I. All flashing material must be of non-corrosive weather-resistant materials and consist of a minimum of .019 inches aluminum or membrane flashing in compliance with the roofing system requirements.
  - J. Solid vinyl siding shall not have fillers, and shall be a minimum of .044 inch in thickness. Provide backing as recommended by the manufacturer. Wood clapboard siding is permissible when required by the State Historic Preservation Office (SHPO) and for existing buildings where the siding is in good repair. Fiber cement board siding shall be prefinished with a manufacturer's finish warranty of 15 years.

#### **4.04.08      *Doors and Windows***

##### **A. *Doors***

1. For multiple dwelling unit projects provide insulated primary entry doors with vision panels. Exterior steel doors and frames should be galvanized/shop primed.
2. Interior apartment entrance door units are to be made of reinforced hollow metal conforming to Steel Door Institute Standards, or solid core wood.
3. Provide a security peep hole on all dwelling unit entry doors.
4. Interior room doors are to be at a minimum molded hardboard construction.
5. Provide vision panels in all doors located in the path of egress.
6. Doors located on patios and balconies shall be capable of providing security in closed and vented positions; include hardware and thresholds that meet accessible standards or capable of being adapted to provide reasonable accommodations, fabricated from solid wood with aluminum or vinyl cladding, fiberglass or insulated steel and comply with one of the following options:
  - a. Swing door with a grade 2 deadbolt and small vending sidelights.
  - b. Swing door with a grade 2 deadbolt, locking heavy duty door screen panel and an adjacent window that locks in the vented position.
  - c. Sliding patio door with a heavy duty door lock comparable to a grade 2 deadbolt such as a floor level heavy duty deadbolt that securely locks in the closed and vented positions, and heavy duty screen panel frame.
  - d. Sliding patio door with a heavy duty door lock comparable to a grade 2 deadbolt, such as an attached hinged telescoping rod with heavy duty bolts for fixing the door securely in the closed and vented positions, and heavy duty screen panel frame.

##### **B. *Windows***

1. Window units are to meet the American Architectural Manufacturer's Association/Wood Door Manufacturer's Association Standard/Canadian Standard AAMA/NWWDA/CSA 101/I.S.2/A440-08 or AAMA/NWWDA 101/I/S.2-97. The minimum acceptable performance classification for vinyl and aluminum windows is CW50 or C50. Wood and fiberglass windows are required to have a minimum design pressure rating of 40 PSF.

The performance grade shall be increased if required for structural performance, as required by the applicable building code. In such cases, the consultant may be asked to justify the grade specified with structural calculations based upon the building code reference standard, Minimum Design Loads for Buildings and Other Structures, ASCE 7- (latest edition).

Wood windows must have exterior cladding except as may be required in historic preservation projects. All operable windows are to be hung (vertical sliding) or projecting hinged type (awning, casement, etc.). All windows are to be provided with full mesh screens except that hung windows may be provided with ½ screens if the upper sash is fixed or provided with an anti-drift mechanism.

2. For rehabilitation projects where original primary windows are remaining, [provide exterior mounted](#) aluminum triple track storm/screen window units at all windows.
3. All windows must have a locking device as well as locks that are tamperproof from the exterior.
4. For family units located in urban neighborhoods, provide window child guards on all unit windows and hall windows above the first floor. Window child-guards to comply with New York City Housing Authority standards for size and configuration or the ASTM Standard for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms.

### C. **Hardware**

1. Exterior entry doors (main and secondary) are to be Grade 1, self-closing, with mortise locksets including a 1" throw [deadbolt lock](#). [Heavy duty/Grade 1 electronic hardware may be considered as an acceptable alternative](#).
2. [Provide Grade 1 hardware for all common, high-use and maintenance doors, including main and secondary entries, laundry, trash and activity rooms. All keyed common doors and dwelling unit main entry doors are to be master keyed or electronically programmable.](#)
3. [Provide lever handled mortise locks on all common-use doors which do not receive panic hardware, and on all main entry doors in senior and Adaptable/Accessible dwelling units. Within dwelling units, provide lever handle hardware on all doors in senior and Adaptable/Accessible dwelling units.](#)
4. [Provide Grade 2, or better, hardware for all dwelling unit \(main and secondary\) doors that includes a 1" throw deadbolt lock.](#)
5. Provide privacy locksets at all dwelling unit bathroom and bedroom doors. Privacy locksets at the bedrooms may be omitted if the management company or owner agrees to provide privacy locksets at the tenant's request.
6. For multiple dwelling unit projects located in areas with security concerns, provide decorative security grilles at basement, first floor *and* all other windows, air conditioner sleeves and at doors with glass lights accessible from the exterior. Security grilles must be constructed of expanded metal or wrought iron and secured in place with hardware that is not removable from the exterior. Security grilles must be operable when required for emergency egress.
7. Provide all operable windows with hardware pulls or integral recessed pulls for ease of operation.
8. In historic renovation projects which must utilize existing large windows or have new large windows meeting historic configurations, provide window hardware which eases window operation for elderly tenants and tenants with physical disabilities.
9. Provide door bumpers at all doors, interior and exterior, as applicable.
10. For multiple dwelling buildings with interior dwelling unit entry doors, provide a mechanical doorbell device or decorative door knocker that includes a permanent apartment identity label.
11. For senior units and dwelling units adapted for tenants with physical disabilities, provide loop or D shape handles on cabinet doors and drawers.

#### **4.04.09 Finishes**

- A. In all dwelling units provide either a minimum of 26 oz., level-loop, commercial grade carpet or minimum 26 oz. residential cut-loop carpet, or 3/4" tongue and groove hardwood flooring, resilient vinyl flooring with minimum thickness of .080", vinyl composition tile with a minimum thickness of 1/8", water resistant laminate flooring or 5/8" solid bamboo flooring.
- B. Provide waterproof assemblies for floor systems of laundry rooms, bathrooms or similar spaces. Extend waterproofing four inches or more above the floor.
- C. Provide one coat of primer and one coat of flat paint to all interior walls and ceilings except in bathroom, kitchen, shared common space walls and all trim, where one coat of primer and two coats of semi-gloss or scrubbable eggshell-gloss paint must be provided.
- D. For all dwelling units, interior wall finishes must be smooth finished gypsum board equivalent to a level four finish in compliance with Gypsum Association standards or an existing smooth plaster finish. Dwelling Unit ceiling finishes must be smooth finished, rolled, sprayed or uniformly textured paint. Acoustical ceiling tiles and wall paneling are not acceptable.
- E. Provide moisture resistant gypsum wallboard on all bathroom walls.
- F. For ceramic tile applications, provide thin-set mortar over cementitious backer board. Ceramic tile bathtub and shower surrounds shall receive solid wood blocking for the installation of grab bars.
- G. The maximum vertical rise in any change in flooring material must be no greater than 1/4 inch.
- H. In family multiple dwelling units rental projects, public corridors and stairways must have vinyl composition flooring.
- I. Provide high contrast, non-slip nosings at public stairways.
- J. Provide finished ceilings in all spaces that may be accessed by tenants.
- K. Provide a base finish at all exposed walls and cabinetry base locations.
- L. Provide vibration and sound absorbing bases or support for equipment subject to motion which could transmit vibration or noise to the structure.
- M. Provide ceramic tile or seamless resilient sheet flooring in bathrooms.
- N. Slip resistant ceramic or quarry tile applications may be provided at entrances, lobbies and vestibules where durability or water protection is a concern.

#### **4.04.10 Specialties**

- A. All bathrooms must be provided with a safety grab bar and soap dish in tub/shower unit; a shower curtain rod, permanently anchored to the wall; toilet paper holder; two towel bars; robe hook(s), and a minimum height of 30 inches, top lighted, mirrored medicine cabinet. Medicine cabinets may require larger mirrors in accessible/adaptable dwelling units.
- B. Provide mailboxes in accordance with USPS standards.
- C. Provide mini blinds at all dwelling unit windows and doors with lites.

#### **4.04.11 Equipment**

- A. Provide ENERGY STAR labeled equipment and appliances.
- B. For zero, one and two bedroom units, provide a minimum of a 14 cubic foot, two-door, frost free refrigerator with freezer compartment, a 30 inch, self-cleaning, range/oven with integral backsplash, lighted range hood and a 24 inch wide single-bowl, stainless steel sink. Stoves in senior dwelling units must have front control knobs.
- C. For family units of 3 bedrooms or larger, provide a minimum of an 18 cubic foot, two door, frost free refrigerator with freezer compartment; a 30 inch self-cleaning range/oven with integral backsplash; lighted range hood. Provide larger sinks as necessary to meet the needs of the dwelling unit size.
- D. Kitchen ranges at accessible locations shall be provided with front controls. Provide control knobs that have set points that can be sensed by the visually impaired.

- E. Kitchen and bathroom cabinet doors and front rails and stiles must be made of natural wood or plywood with a laminate finish. Particle board is not permitted.
- F. Range hoods in accessible/adaptable units must be provided with two wall switches located within accessible reach ranges. One switch to control the range hood light and one switch to control the range hood fan.
- G. When range hoods are ducted through the overhead wall cabinet, the duct must be "boxed-in" with wood finished to match the cabinets. The remainder of the wall cabinet must be usable. Range hood ductwork located above the wall cabinets must be concealed, such as in a soffit.
- H. Provide kitchen cabinet hinges which are inter-locking and self-adjusting.
- I. Countertops and backsplashes must be exterior grade plywood or other equally water resistant panels and with a laminate finish in all family dwelling units. Standard particle board countertops and backsplashes are permitted in elderly dwelling units.

#### **4.04.12 Conveying Systems (Projects with elevators)**

##### **A. General Requirements**

1. Elevator must be in compliance with ASME/ANSI A17.1 safety code for elevator, latest edition, the National Electrical Code or applicable local electrical codes, NYS Building Code, applicable local building code and HUD property standards.
2. All elevators must comply with ANSI A 117.1, latest edition, for handicapped accessibility requirements.

##### **B. Number of Elevators**

1. In multi-dwelling, family projects, elevator(s) must be provided to serve approximately six to seven percent of the population in a five minute demand. Acceptable waiting time shall be 50 to 90 seconds. Calculate the anticipated population as two occupants per bedroom unless a higher population is known.
2. In multi-dwelling, elderly projects, provide an elevator to serve five to six percent of the population in a five minute demand period. Population statistics must be calculated, at a minimum of 1.25 to 1.5 occupants per bedroom.
3. For determining the number of elevators, allow for an area of three square feet per person to accommodate heavy clothing and packages.

##### **C. Size Requirement:**

Provide a car with a 2500# rating. Inside clear dimensions must be a minimum of 80 inches wide by 51 inches deep.

##### **D. Finishes**

1. Flooring, at a minimum, must be heavy-duty, wear-resistant, vinyl tile;
2. Wall and ceiling panels must be plastic laminate;
3. Handrails must be stainless steel; and
4. Lighting must be, at a minimum, fluorescent.

##### **E. Car Controls**

Provide, at a minimum, the following car controls and accessories:

1. Lighted call button at each landing;
2. Position indicator in the car;
3. Prominent direction arrows in the car and, at each landing;
4. Shatterproof mirror mounted on one upper corner of the car to allow over-view of the car before entrance;
5. Floor designation mounted on both jambs of every door;
6. Car position indicator in main lobby;

7. Audible signals which sound at each floor, sounding once in the up direction and sounding twice in the down direction;
8. Emergency call phone connected to the manager's office; and
9. An in-car alarm button.

**F. Guarantee**

1. Provide a written guarantee from the manufacturer to cover parts and components for a period of one year after the date of final acceptance.
2. Repairs or replacements made under the guarantee must be guaranteed for an additional one year period.

**G. Service Contract**

1. Elevator contractor must provide a service contract to cover maintenance and callback service for a period of one year after the date of final acceptance by owner. Coverage must include regular and systematic examination, adjustment, lubrication and repair and/or replacement of equipment whenever required by the wear and tear of normal elevator usage. A service contract must be in continual enforcement for the entire length of the regulatory period.
2. Owners are required to provide an Annual Service Contract for continual coverage for the entire length of the regulatory period. Service Contracts are to provide the same level of coverage as outlined above.

**4.04.13 Mechanical**

**A. Plumbing**

1. All water supply and heating piping must be of type K soft temper copper for below grade exterior lines, and either type L hard temper copper for interior domestic water lines, type M for hydronic heating lines, or cross-linked polyethylene (PEX) piping. Copper piping must be installed with soldered joints using lead free solder.
2. PEX piping is allowable for hydronic heating and domestic water lines in installations meeting ALL of the following requirements:
  - a. PEX piping system runs are contained within individual dwelling units. PEX shall not be used for main lines to and from the dwelling units or other areas. Main supply and return piping shall be copper piping complying with the above section.
  - b. All plumbing fixtures and heating units are piped directly to fixtures from a central copper or brass manifold that is supplied by copper piping, located within the dwelling unit and includes individual brass shut-off valves on each branch line. All pipe, fittings and crimp rings must be part of one manufacturers system. Manifolds that are part of that manufacturers system may be utilized if they are certified to the standards of ASTM F877.
  - c. There are no connectors, unions, or splice, etc., located between the central manifold and the termination. Note: Terminations may be within the wall at copper stub-out pipes secured to the wall framing with a support plate. Heating units are allowed to be piped as a continuous loop from heating unit to heating unit with no intervening connections.
  - d. All piping shall carry a 25 year manufacturer's warranty.
  - e. The connectors shall carry a 2 year manufacturer's warranty.
  - f. Connectors shall be brass or bronze with full circle brass, copper or stainless steel crimp ring connectors that utilize crimping tools meeting the manufacturer's specifications. Slip, push-fit, adjustable and cinch type connectors are not allowable.
  - g. This system shall be installed meeting all requirements of the pipe and connector manufacturer.

- h. The installing contractor shall provide an installation warranty of 2 years.
  - i. Installation shall be pressure tested to 100 psi for a minimum of 4 hours.
  - j. PEX piping shall not be used for mechanical equipment (boilers, hot water heaters, etc.)
3. Provide drain pans for all hot water tanks, washing machines, etc.
  4. All pre-manufactured tubs/ shower units are to be at a minimum made of a seamless one-piece molded construction. Pre-manufactured bathtub and shower units in adaptable dwelling units shall be factory reinforced to accept grab bars meeting applicable accessibility requirements. Pre-manufactured bathtub and shower units in adapted locations shall be factory equipped with all required grab bars.
  5. Tub/shower fixture handles must be the *paddle handle* type, single-mixing valve with a scald-proof feature.
  6. All tub and shower units are to be provided with a slip resistant finish.
  7. For elderly units, provide lever faucet controls for the kitchen sink and bathroom lavatory.
  8. For elderly units, provide a hand-held shower head with a least 5 feet of hose on an adjustable bracket.
  9. Provide water conserving fixtures as follows: toilets – 1.6 gpf; showerheads – 2.2 gpm; kitchen faucets – 2.2 gpm; bathroom faucets – 2.0 gpm or better for all fixtures.
  10. All fixtures shall be connected to vent stacks which extend to above the roof surface.
  11. All sprinkler piping shall run in concealed spaces. At top floors, piping shall be protected from freezing by utilizing side wall sprinkler heads at interior partitions or by running piping in dropped soffits that are completely enclosed on all four sides below the thermal envelope.

## B. HVAC

1. Provide ENERGY STAR labeled heating and cooling equipment, or equivalent.
2. Electric heating systems and electric domestic hot water systems are not permitted.
3. Provide mechanical ventilation for all bathrooms and kitchens. Vent all to exterior with vent hoods. Filtered vents are not acceptable. See additional Range Hood requirements in Section 4.04.11 F&G.
4. If through-the-wall air conditioning unit sleeves are provided, they must be constructed of non-corrosive materials and be air sealed and insulated to a minimum R value of the surrounding wall cavities.
5. Provide central heat to all habitable rooms, and kitchens and bathrooms unless suitable supplemental heat is provided.
6. Provide adequate ventilation in attic to reduce heating/cooling loads on top floors of buildings.
7. HVAC ducts shall not run in exterior walls, unheated attics or unheated crawl spaces.
8. All forced air heating and cooling systems shall run within the thermal envelope as required by the energy code or energy efficient strategy utilized for the project. Ductwork shall be rigid metal with a smooth interior surface, and shall be sealed air tight. Insulated ductwork shall have insulation jackets or covers placed over the exterior surface of the duct surround. Non-metallic flexible duct shall not be used.

9. All apartments shall be treated as individual heating zones controlled by a wall mounted thermostat in each apartment. For dwelling unit heating systems, provide a programmable thermostat capable of maintaining different temperature set points at different times of the day. In buildings with common heating systems, provide either programmable thermostats in each apartment, or building system set-back controls, as allowable by the applicable building codes.
10. Packaged Terminal Air Conditioning (PTAC) units will be accepted when part of a central heating system, provided documentation is submitted that demonstrates the PTAC units meet ENERGY STAR standards or the equivalent, and are superior in air leakage resistance and noise transmission.

#### **4.04.14      *Electrical***

- A. Electric heating systems and electric domestic hot water systems are not permitted.
- B. Provide exterior lighting **controlled by a daylight** sensor or timer at all exterior entrance doors and on all outdoor lighting.
- C. For projects in areas with security concerns, provide a security alarm for all exterior door units.
- D. Provide a doorbell system for all exterior dwelling **main** entry doors.
- E. Provide a minimum of one pre-wired telephone jack in the living area of each dwelling unit. The entire telephone system is to be prewired. Cables are to be concealed within walls, ceilings, floors, chases, etc.
- F. Provide a minimum of one pre-wired cable TV outlet in the living area of each dwelling unit. The entire **cable TV** system is to be prewired. Cables are to be concealed within walls, ceilings, floors, chases, etc.
- H. **All lighting shall be ENERGY STAR labeled, or provide the equivalent in energy savings and quality. Interior lighting and exterior building lighting shall incorporate ENERGY STAR fixtures, or high efficacy lamps. Exterior site lighting shall utilize high efficiency lighting. All exterior building and site lighting shall include either daylight sensors or timers to minimize electrical usage.**
- I. **Interior lighting shall be** either wall sconces or ceiling fixtures controlled by a wall switch **and provided** in each room and corridor of all dwelling units, and in all public residential spaces and utility spaces. Separate fixtures shall be provided in living and dining areas of all dwelling units. Ceiling fixtures shall be a pendant type fixture with lamp exposed on the bottom, have a glass enclosure that completely surrounds the lamp, **or shall be designed in such a manner as to not trap foreign matter.** Ceiling fixtures which have a glass plate suspended below the lamp are not acceptable. Do not use recessed light fixtures at insulated ceiling areas. Increase lighting levels in senior projects to account for age related decreases in vision.
- J. Provide an intercom system for multiple dwelling projects where unit entry doors are not accessible directly to the outside.
- K. Branch circuit wiring must be 12 gauge or larger.
- L. Provide lighting levels meeting Illuminating Engineering Society recommendations. Locate lighting to thoroughly light pedestrian walkways from parking spaces and public sidewalks to building entrances. Distribute lighting to ensure safety and minimize security concerns. Provide daylight sensors or timers for all exterior lighting fixtures.

- M. In senior units, provide an emergency call system in each dwelling unit's bedroom and bathroom that is connected to a central station. Provide an annunciator panel in lobby or vestibule. Provide a toggle switch activated in a downward direction and pull cord dropping to within 4 inches above the floor. Provide indicator lights over each dwelling unit entry door. Exception: Wireless systems are acceptable if the pull stations are manufactured to be permanent built-in fixtures and the system activates a central station operated by the building management with no operational changes to the tenant.
- N. In senior projects, a central fire alarm system is required for all buildings with twelve or more units and for projects two or more stories in height.
- O. All dwelling units are to be directly metered to the electric utility company; sub-metering is not allowed.
- P. [Circuit breakers and electrical panel door latches shall be located within an Accessible height reach range in Accessible and Adaptable dwelling units.](#)
- Q. For dwelling units that are designed for those with hearing or vision impairments provide, at a minimum, the following audible/visual (A/V) features:
  - 1. Hardwired unit entry doorbell with A/V features. Locate the doorbell w/A/V features in the living room and bedrooms.
  - 2. Intercom system with A/V features.
  - 3. Smoke detectors with A/V feature.
  - 4. Carbon Monoxide detectors with an A/V alarm.
  - 5. Building fire alarm with A/V alarm in the living room.
  - 6. Building fire alarm with a strobe in the bathroom and bedrooms.

# **Appendix A.....**

## **Architecture & Engineering/Technical Services Bureau Offices**

### ***Architecture & Engineering Bureau, Upstate Unit***

38-40 State Street

Albany, NY 12207

(518) 474-1030

*Michael DeBonis, Acting Assistant Director*

### ***Architecture & Engineering Bureau, Downstate Unit***

25 Beaver Street

New York, NY 10004

(212) 480-7233

Ralf Torke, Acting Director

### ***Technical Services Unit***

641 Lexington Avenue

New York, NY 10022

(212) 872-0465

Clifford Archer, Vice President, Construction

# Appendix B .....

## Owner/Architect Contract Provisions

For projects following the Construction Loan process, if the AIA Document *B101™ - 2007 Standard Form of Agreement Between Owner and Architect* is used, the following information shall be included in the sections as referenced below. If any other Owner-Architect agreement documents are used, include equivalent provisions in the appropriate sections. Any agreement document other than an AIA B Series document must be approved by HCR prior to its implementation.

1. The Architect shall use his/her best efforts to assure the Contractor's compliance with the Contract Documents.
2. Section 3.1- Architect to provide the following services listed in Section 4.1 as part of Basic Services Compensation 11.1:
  - a. 4.1.8 Landscape design
  - b. 4.1.11 Detailed cost estimating- Note that the construction cost estimate submitted with Funding Application must be prepared by the contractor or independent cost estimator.
  - c. 4.1.13 Conformed construction documents
  - d. 4.1.15 As-constructed record drawings- Provide one set of drawings printed on bond paper and three sets of .pdf files on CD-ROMs of the record drawings showing changes in the work made during construction based on marked-up drawings and other data furnished by the contractor to the Architect.
3. Section 3.6.1.3- The Architect's contract terminates at the correction and completion of punch list items by the contractor, and compensation for services should reflect this requirement.
4. Section 3.6.2.1- The Architect shall keep the Owner informed of the progress and quality of the Work by performing site visits at a minimum interval of once every two weeks.
5. Section 3.6.5.1- All proposed changes in the work must be accepted by HCR/HTFC to ensure they meet the design requirements of HCR/HTFC.
6. Section 7.3- If this agreement is terminated before the completion of the Architect's services, the owner may use the drawings, specifications, and other documents prepared by the Architect, and retain another licensed architect who may utilize any or all of these documents, and who would assume professional liability.
7. Section 11.1- Compensation for Architect's services shall be a stipulated sum or fixed fee amount. All expenses of the Architect are to be included in the Basic Compensation.
8. Section 11.4 - Compensation for Additional Services of the Architect's consultants shall be computed as a multiple of 1.00.
9. Section 11.8.2- Reimbursable expenses shall be computed as a multiple of 1.00 and shall be identified as a stipulated amount or a not to exceed dollar amount.
10. Section 11.10.2- Payments are due and payable to the Architect within 30 days from date of Architect's invoice.

# Appendix C.....

## Architect's Certification Statement (Formatting revised)

I, the undersigned architect, am licensed to practice in the State of New York.

My architectural firm represents \_\_\_\_\_ ,  
the (HOME/HTF) project applicant.

I hereby certify that, to the best of my knowledge, the following:

\_\_\_\_\_  
(SHARS No.) (Project Name)

and located at \_\_\_\_\_  
(Project Address)

is in compliance with all applicable subdivision, zoning, building, energy and other similar State and local government laws, regulations and/or requirements relating to location, size, use and construction. I also certify that to the best of my knowledge and belief, the project complies with all HCR/HTFC design and specification requirements.

I also certify that to the best of my knowledge and belief the project (will)/(has) satisfy(ied) any requirements set forth by the applicable New York State agency for compliance with the State Environmental Quality Review Act, the Historic Preservation Act, the Waterfront Revitalization and Coastal Resources Act, and the National Environmental Protection Act.

I also certify that the project (will have)(has):

- \_\_\_\_\_ fully Accessible & Adapted, and Adaptable units;
- \_\_\_\_\_ fully Accessible & Adapted for wheelchair use with a bathtub;
- \_\_\_\_\_ fully Accessible & Adapted for wheelchair use that includes a roll-in shower;
- \_\_\_\_\_ fully Accessible & Adapted for residents who have a visual or hearing impairment;
- \_\_\_\_\_ Visitable units, as defined in the Design Handbook
- \_\_\_\_\_ total dwelling units of all types, and

that the project plans and specifications are in compliance with all applicable state and federal laws concerning accessibility and adaptability.

\_\_\_\_\_  
*Signed*

\_\_\_\_\_  
*Notary Public*

\_\_\_\_\_  
*Date*

## **Appendix D .....**

### **Owner/Contractor Contract Provisions**

For projects following the Construction Loan process the following information shall be included in the Standard Form of Agreement between Owner and Contractor:

1. Provided an Application for Payment is received by the Architect no later than 10 days prior to the scheduled requisition day of a month, the Owner shall make payment to the contractor no later than 30 days after the Architect issues the Certificate for Payment. If an Application for Payment is received by the Architect after the application date fixed above, payment shall be made by the Owner no later than ten days after the Architect receives the Application for Payment and issues the Certificate for Payment.
2. Upon substantial completion of the construction contract, the retainage released by HCR/HTFC will be calculated based upon whichever of the following results in a greater remaining retainage:
  - a. A reduction in retainage from 10% to 5%, or
  - b. The value of incomplete work, as determined by the Architect and HCR/HTFC, multiplied by 2.5.
3. The construction contract is contingent upon execution of all contracts from all construction financing sources.
4. Payments are contingent upon HCR/HTFC review and approval.

# Appendix E

Not used

# Appendix F..... HTFC Preservation Standards

For [Moderate Rehabilitation Projects](#) applying to HTFC to renovate occupied buildings meeting the HTFC definition for a preservation project, the following standards shall apply:

1. The applicant shall have the HTFC Physical Needs Assessment Form completed by an architect or engineer licensed in the State of New York. All components and systems identified in this form that are contained in the project shall be evaluated. Add additional lines and information as necessary to evaluate components and systems which are not listed on the form.
2. All new work shall meet the requirements of the current HCR/HTFC Design Handbook.
3. As part of the HTFC required project replacement reserve budgets, the applicant must document that there are sufficient funds budgeted to address systems and components which are not being replaced, repaired, or will not last through fifteen years from the date of the last HTFC payment.
4. Life expectancy evaluations shall be based upon nationally recognized sources and account for local conditions which may reduce life expectancies due to unique situations and project specific conditions.
5. The work scope shall include replacing and upgrading systems and components as outlined below. These items shall be included in the HTFC Physical Needs Assessment Form.
  - For projects constructed prior to 1978, provide a lead assessment survey and develop a lead based paint work plan in accordance with current HUD Guidelines. (Refer to *Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing*, HUD-1539-LBP, [Second Edition, July 2012](#)); and the EPA Renovation, Repair and Painting Rule (40 CFR Part 745).
  - For projects which have not undergone an asbestos removal plan, do not have a current asbestos survey, or otherwise are suspected to contain asbestos containing materials which were not previously addressed, conduct an asbestos survey and corresponding asbestos removal plan.
  - Provide a survey to determine if hazardous mold exists in the building. Where mold is identified, it must be addressed in accordance with New York City “Guidelines on Assessment and Remediation of Fungi in Indoor Environments.”
  - For buildings located in EPA zones 1 and 2, provide an independent third party test to determine if radon gasses exceeding the EPA action level exist in the building. Mitigate in accordance with EPA Guidelines if radon gasses exceeding the EPA action level are found in the building. See ASTM E 1465 and E2121 (latest editions) for guidance.
  - Include an assessment of other readily observable hazardous materials such as leaking oil tanks, stored hazardous materials, and fluorescent light ballasts containing PCBs.

- Re-grade as necessary to provide positive drainage away from buildings.
- Correct deficiencies of the exterior accessible route to the extent possible within existing grades. Include work such as: re-paving sidewalks along the exterior accessible route, adding or repairs to curb cuts, re-stripping of parking lots and adding signage at accessible parking aisles.
- Relocate laundry facilities for Accessibility, if feasible.
- Include handrails that are easily grasped on each side of corridors in elderly housing projects.
- Test all elevators and include all necessary repairs in the proposed work scope.
- Add wall indicators at the entry level elevator lobby.
- Upgrade elevator controls and alarms to current Accessibility standards.
- All windows must have locks that are tamperproof from the exterior.
- Provide new window treatment at all dwelling unit windows meeting current Design Handbook requirements.
- For multiple dwelling unit buildings located in areas with safety concerns, provide decorative security grilles at all windows accessible from the exterior. Where possible, locate security grilles at the exterior. Provide at least one security grill in each habitable room which can be opened in an emergency from within the apartment.
- Repaint all dwelling units and interior public spaces.
- Replace all existing carpeting with new.
- Provide a non-combustible wall surface where existing kitchen ranges abut sidewalls.
- Provide a grab bar at all bathtubs and shower units if none currently exist.
- Provide safety guards or decorative heavy duty wire mesh as necessary to prevent a 4" sphere from passing through balcony and stair railings.
- Test all fire alarm systems and sprinkler system alarms. Include all necessary repairs in the work scope.
- Test all emergency and exit lights. Replace fixtures accordingly.
- Provide fire alarm systems meeting current State Building Code requirements, if none currently exist.
- Provide new hardwired smoke alarms and CO detectors in dwelling units meeting current State Building Code requirements for new buildings, if none currently exist.
- [Replace all existing smoke alarm, CO alarm and fire alarm detector heads throughout the building.](#)
- Provide fire extinguishers in cabinets as required by the State Fire Code.
- Balance all HVAC systems.
- Replace existing electric heating and electric hot water heaters unless past utility bills clearly indicate that the dwelling units will be affordable in accordance with the proposed rent plans.
- Replace all light bulbs with ENERGY STAR, or equivalent, luminaire lamps.

Submit documentation of any existing Building Code violations or other non-compliance conditions. Include the correction of these conditions in the work scope.

# **Appendix G - Handicap Accessibility Requirements**

*(for guidance only- verify actual requirements with applicable codes and regulations)*

Handicap Accessibility Requirements	Building Code of NYS	Federal Fair Housing Amendments Act Fair Housing Act Design Manual	Section 504 of the 1973 Rehabilitation Act Uniform Federal Accessibility Standards (UFAS) Or 2010 ADA in accordance with US Department of Justice Guidance
New Construction	<p>All dwelling units in residential buildings with four or more units with elevator;</p> <p>All ground floor units in buildings without elevator service. (Multistory dwelling units or townhouses are not included.)</p>	<p>Covered Dwelling Units: all dwelling units in buildings containing four or more dwelling units if such buildings have one or more elevators, and all ground floor dwelling units in other buildings containing four or more units.</p> <p>(Multistory dwelling units or townhouses are not covered dwelling units.)</p>	<p>For federally funded multifamily (five or more units) new construction projects: 5% of the units or at least one unit, be accessible; plus 2% of the units or at least one unit be accessible for persons with vision or hearing impairments, both as per 24CFR 8.22</p>
Rehabilitation	<p>Projects classified as renovations, alterations, and change of occupancy (unless technically infeasible) must meet applicable accessibility requirements.</p>	<p style="text-align: center;">Not Required</p>	<p>Projects with 15 or more units and the cost of alterations is 75% or more of the replacement cost of the completed facility (unless structurally impracticable) must have 5% of the units or at least one unit be accessible, and an additional 2% of the units for vision or hearing impaired as per 24CFR 8.23(a).</p> <p>Projects with less than 15 units and the cost of alterations is 75% or less of the replacement cost of the completed facility must comply to the maximum extent feasible, as per 24CFR 8.23(b)</p>