

DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT
HOME/HSF/CIPF/CATNHP
CONSTRUCTION/REHABILITATION GUIDELINES
JULY 13, 2007

The Department of Housing & Community Development (DHCD) has developed construction and rehabilitation guidelines for projects that receive state assistance including:

- HOME Investment Partnerships Program (HOME);
- Housing Stabilization Fund (HSF);
- Capital Improvement Preservation Fund (CIPF);
- Commercial Area Transit Node Housing Program (CATNHP).

The guidelines, along with the information in DHCD's Qualified Allocation Plan (QAP) for the Low Income Housing Tax Credit (LIHTC) program, are intended to promote high quality standards that are site appropriate and cost effective.

With assistance from architects, DHCD staff assigned to the above named programs will review all plans and specifications for each assisted project to ensure that the guidelines are being followed. The design and construction guidelines of other funding agencies also must be followed, with the highest program standard becoming the minimum requirement. DHCD reviews architectural plans and specifications for all construction projects, although, at its discretion, DHCD may decide to review only project specifications.

CONSTRUCTION/REHABILITATION REVIEW PROCESS

The DHCD review occurs several times during the development process. DHCD requires project sponsors to submit current and/or updated drawings and other information for the following:

Schematic Review: This is an initial review of the project proposal and focuses on issues of unit design and cost efficiency. The following documents are typically required for a schematic review:

- Site plan showing footprint and proposed landscaping
- Proposed floor plans
- Exterior elevations
- Preliminary construction budget

Final Review: Prior to closing financing on the project, the project sponsor must submit the following to DHCD for review and approval:

- Final plans and specifications
- Final construction budget
- Final construction disbursement schedule

DHCD DESIGN REVIEW

DHCD recommends that project sponsors engage an architect/engineer and/or cost estimator to prepare plans and costs for project work. When complete plans are submitted, DHCD's contract architect reviews them for compliance with all applicable regulations and conformance to DHCD design guidelines. A meeting among the developer, project architect, DHCD contract architect, and DHCD staff may be arranged to discuss any design concerns, or DHCD may have its contract architect contact the developer to make comments or suggestions for improvements. DHCD approval of the final set of plans is required before a project can move forward to loan closing.

The DHCD review does not replace the reviews or regulations that may be required by other agencies, nor can it be replaced by the review of other agencies.

DHCD-assisted projects are subject to applicable program guidelines as well as to applicable local, state, and federal administrative and funding source regulations, including but not limited to:

- Local Zoning Ordinances
- Massachusetts State Building Code
- National Electrical Code
- Massachusetts Fuel Gas and Plumbing Code
- Massachusetts Fire Regulations
- Massachusetts Elevator Regulations
- Massachusetts Sanitary Code
- Massachusetts Dept. of Public Health Requirements
- Massachusetts Historic Commission Recommendations
- U.S. Dept. of Energy Regulations
- Massachusetts Dept. of Environmental Protection Regulations
- U.S. Environmental Protection Agency Regulations
- HUD Rehabilitation Guidelines
- HUD Section 8 Housing Quality Standards
- Americans with Disabilities Act
- Section 504 and Fair Housing Act
- Massachusetts Architectural Access Board Regulations
- Local, State, and Federal Requirements Related to Sewage/Septic Systems

The following design recommendations are intended to promote the production or preservation of quality housing that is attractive, comfortable, and marketable to prospective residents or buyers. The recommendations comply with or exceed the minimum standards required by the State Building Code, State Sanitary Code and HUD regulations. They are intended to guide project sponsors and architects as they plan new construction or the rehabilitation of housing structures. If it is not feasible to comply with any of these standards, an explanation should be provided in the application. If a project sponsor determines that it is not feasible to comply with these recommendations, they should contact DHCD to discuss the issue.

OVERALL UNIT SIZE:

New construction and rehabilitation units typically must be no smaller than the following:

- SRO: 120 sq.ft.
- Enhanced SRO: 175 sq.ft. (includes food prep area & bathroom)
- One-bedroom unit: 600 sq. ft. (or applicable HUD program standards, if 202, etc.)
- Two-bedroom unit: 850 sq. ft.
- Three-bedroom unit: 950 sq. ft.
- Four or more bedroom unit: 1100 sq. ft

MINIMUM ROOM SIZE:

Rooms in new construction and rehabilitation projects must meet the following minimums (including a dimensional minimum):

- Primary bedrooms: 120 sq. ft. (10.5 ft.)
- Secondary bedrooms: 100 sq. ft. (9 ft.)
- Living room: 150 sq. ft. (12 ft.)
- Dining room: 100 sq. ft. (10 ft.)
- Living/dining room combo: 200 sq. ft. (12 ft.)
- Full bathroom: 40 sq. ft. (5 ft.)

If a room has a sloped ceiling, any portion of the room measuring less than 5 feet from the finished floor to the finished ceiling shall not be included in the measurement of the floor area.

Closets and storage cannot be included in the measurement of the floor area.

KITCHEN:

The size of the unit should determine the amount of counter space to be provided:

	<i>counter space length</i>	<i>min. circulation width</i>
• One bedroom unit	6 linear feet	4 feet
• Two bedroom unit	8 linear feet	4 feet
• Three or more bedroom unit	10 linear feet	4 feet

The minimum total linear feet of counter does not include the space occupied by the sink, stove, and refrigerator.

BATHROOM:

The number of bedrooms within the unit determines the number of bathrooms:

- One-bedroom unit One bathroom
- Two-bedroom unit One bathroom

- Three-bedroom unit One-and-a-half bathrooms (minimum)
- Four or more bedroom units Two bathrooms

REUSABLE AND SUSTAINABLE MATERIAL USE:

Sponsors are asked to:

- Use fewer building materials through advanced framing techniques or other systems approach to building construction.
- Use recycled content such as:
 - High fly ash content concrete in foundations, wall systems and finish floors.
 - Cementitious siding, or stucco with high fly ash content.
- Composite framing such as engineered joists instead of dimensional lumber:
 - Light-gauge steel in whole house or interior walls. (Verify that thermal bridging is avoided if steel is used in exterior walls.)
 - Rapidly renewable resource materials for flooring and finishes such as wheat straw board and bamboo.
 - Insulation made of renewable, easily recyclable material or recycled content such as recycled newspaper (cellulose), soy based foam, cotton fiber, or other when appropriate.
- Use locally available building materials such as:
 - Locally produced masonry.
 - Recycled lumber or locally milled timber or Forest Stewardship Council (FSC) certified lumber or other recycled materials.
 - Recycled aggregate from demolition of existing site work or structure or nearby source.

ENERGY EFFICIENCY:

Sponsors are asked to:

- Use properly sized and designed sealed combustion boilers or furnaces and distribution systems or other low-energy use heating.
- Use tankless water heaters, indirect water heaters, sealed combustion water heaters, or solar hot water heaters.
- Specify compact fluorescent fixtures.
- Specify Energy Star appliances throughout.
- Specify insulation as required by Energy Star standards and above code where feasible.
- Avoid or minimize air-conditioning with natural ventilation or other passive cooling strategy.
- Consider renewable energy sources such as photovoltaics (or pre-wire to be added when feasible) using research grants and rebates.

INDOOR ENVIRONMENTAL QUALITY – HEALTHY BUILDINGS :

Sponsors are asked to:

- Detail building envelope to shed water with adequate flashing and a continuous drainage plane (rain-screen). Design walls to be able to dry to the interior, exterior, or both as appropriate.
- Provide operable windows with screens to take advantage of natural cross-ventilation when possible.
- Provide mechanical ventilation to remove excess moisture and indoor pollutants from living spaces and to provide an adequate amount of outside air.
- Specify sealed combustion boilers, furnaces, and water heaters.
- Use only low volatile organic compound (VOC) paints, sealants, and finishes.
- Use paperless gypsum board or cement board at all damp areas.
- Install flooring with low or no off-gassing such as concrete, ceramic tile, FSC certified wood flooring, or bamboo with low urea formaldehyde content.
- If wood or bamboo flooring is finished on site, use low VOC water-based polyurethane finish.
- Minimize the use of carpeting, which can hold dirt, mold, and other allergens. If carpeting is necessary, specify carpet with low VOCs recyclable fiber and backing content. If available, install carpeting that can be recycled.
- Install carbon monoxide detectors in living areas as well as garages.
- Perform fresh air flushing before occupancy.
- Educate tenants or owners by providing user manuals on use of systems, their required maintenance such as changing of filters and batteries. Use filters that remove allergens in forced-air units.
- Protect onsite building materials from rain during construction to prevent mold growth.
- Design wall and ceiling assemblies to mitigate impact sound and air-borne sound transmission between units.

ADDITIONAL DESIGN REVIEW CONSIDERATIONS

Sponsors should note:

- Projects funded with federal funds must meet accessibility guidelines as mandated under Section 504 and the Fair Housing Act.
- In projects receiving state funds with twenty or more housing units, five percent of the units must be accessible to persons with disabilities.
- Prior to insulating and finishing walls, solid 2X blocking must be installed where accessories such as grab bars, towel bars, soap dishes, and toilet paper holders are to be located. In projects of four units or more of new construction, all bathrooms must be blocked to permit the retrofitting of grab bars in the tub surround area and around the toilet as required by MAAB Code regarding adaptability.
- A closet in each bedroom, an entry closet, and a linen closet must be provided. Closets should have a minimum depth of two feet.

- Kitchens must be designed with a pantry or broom closet.
- All applicable appliances must be Energy Star* rated.
- Range hood vented to outdoors.
- Garbage disposer, ¾ HP minimum.
- 30” range with self-cleaning oven.
- Dishwasher, if the unit includes a full kitchen.
- Refrigerator sized for maximum energy savings.
- Storage space should be provided wherever possible.
- The design should optimize the use of space. Unit size and layout should maximize efficiency and minimize circulation (hallways), provide spacious furnishable main living areas and provide adequate storage.
- For all buildings under rehabilitation, designs shall include durable, low maintenance, energy efficient systems and materials. Electric heat is not acceptable.
- **All new construction must be designed to meet the National Energy Five Star efficiency performance standards. All procedures used for this Five Star rating must comply with National Home Energy Rating Systems guidelines.**
- Cementitious siding materials, such as Hardi-plank or Cem-plank is the preferred exterior siding to vinyl cladding for residential buildings.
- Specifications should include fiberglass/asphalt roofing shingles with a minimum of a 25-year warranty or fully adhered compounded rubber sheet elastomer (EPDM) single membrane for flat roofs. All pitched roofs must have a ridge and soffit venting system when appropriate.
- Window guards or heavyweight screening must be installed in windows of housing units where a child 6 or under may live or regularly visit, whenever appropriate.
- Painted finishes should have 1 coat primer and two finish coats.
- Bathroom floors must be tiled with a floor grade, non-slip glazed or unglazed ceramic tile or linoleum (marmoleum or equal). VCT is not approved for bathrooms. Linoleum sheet goods shall be limited to entryways, kitchens, bathrooms, and dining rooms.
- If carpeting is installed, 26 oz. minimum fabric face weight per square yard is the standard. Specify carpet with low VOCs and recyclable fiber and backing content. If available, install carpeting that can be recycled.
- Stacked plumbing is strongly recommended in order to reduce material and construction costs, and to centralize water and sewer lines.
- All mechanical equipment should be located and installed so that it cannot be seen from the surrounding street. Special attention must be given to preventing excessive noise or other kinds of annoyance from any mechanical equipment.

Any proposed deviations from design recommendations should include a narrative describing why an alternative approach/material is preferred.

PLAN REQUIREMENT GUIDELINES

This section outlines the type of drawings and other information that should be submitted for HOME/HSF/CIPF/CATNHP rehabilitation of existing buildings or new construction projects. DHCD strongly recommends that an architect and/or construction cost estimator prepare the

plans and construction budgets for each project. For new construction, DHCD requires that an architect prepare the plans and specifications. Incomplete plans will not be reviewed.

Site Plan: Indicate the location of the building, property lines, access to the building from the street, landscape, curb cuts, driveways, orientation (north arrow). Suggested scale: 1:20 (1" = 20')

Existing Floor Plan: Include plans for each floor, including basement. Drawings should be drawn at 1/4 scale (1/4" = 1'-0"). The existing floor plans should include the following information:

- Structural elements such as existing bearing walls, columns (indicate this with a note or graphically, e.g.: shade in the structural walls).
- Direction of floor joists if structural changes are being made.
- Existing plumbing, ventilation chase, fireplaces and any other information that affects design.

Proposed Floor Plans: Drawings should address changes of layout, removal of walls or structural elements, or any other changes other than minor non-structural repairs (for maintenance purposes).

The proposed floor plans should include the following information:

- Unit Floor Area (i.e.) the total area within the unit exterior walls.
- Room Areas (i.e.) the area within the perimeter wall of the room excluding storage and closet space.
- Overall and interior dimensions.
- Vertical structural elements.
- Wall thickness to scale.
- Location and size of windows, indicating the window-sill height (measured from the finished floor).
- Ceiling heights.
- Location of mechanical equipment, meters, and electric service panels.
- Location of water, gas, sewer, and electric services.
- In the case of attic renovation, drawings should be provided indicating ceiling heights, knee wall heights, dormers location etc.
- All units should be built with internet connectivity, COAX cable for TV and CAT5e or better for phone.

Elevations: Drawings should include front, side and rear elevations.

LANDSCAPING GUIDELINES

This section outlines suggestions for site improvements and landscaping for HOME/HSF/CIPF/CATNHP projects.

SITE DESIGN:

- Where possible, provide usable areas such as the following where the community can meet and gather:
 - Safe play areas for children in multifamily developments.
 - Community garden areas.
 - Semi-public open spaces.
 - Patios, front yards, porches, or balconies to encourage community interaction and provide eyes-on-the-street surveillance.
- Provide for alternative transportation, e.g., bike paths and storage, pedestrian links, car shares.
- Provide accessible routes of travel and avoid use of stairs, wherever the terrain permits.
- Prioritize pedestrian over vehicular traffic and use traffic calming devices. Incorporate attractive well-lit pedestrian paths wherever possible.
- Consider outdoor spaces for urban agriculture-community gardens, planters for vegetables, herbs, flowers.

SITE DEMOLITION AND CLEARING:

- Remediate all hazardous materials such as asbestos (ACM's) and lead (LCM's) carried out according to all applicable state and federal regulations.
- Provide a summary and accurate estimate of the ASTM site remediation plan, if applicable, along with grading plans.

TREE /SHRUB PRUNING AND REMOVAL:

- Remove trees that originate at foundation wall of building or present a hazard to the structure.
- Remove dead trees.
- Trim stump to finished grade level or below.
- Prune back branches that overhang roof or brush walls of building.
- Prune branches that may threaten utility connections.
- Clean up and properly dispose of brush and wood.
- Remove shrubs that are diseased, those that obstruct walkways, drives and pathways, and those that obstruct windows.

Grading: Restore grade to include a 6" minimum deep planting bed of clean loam/topsoil. New grade should slope away from buildings and fit the existing neighboring grades, particularly at street or sidewalk. Grades for lawn areas should not exceed twenty percent. The grade across paved areas should not exceed four percent.

PAVING, FENCING & WALLS:

- Restore walks and driveways to good condition.
- Fences should never exceed 6 feet. Material and style should be appropriate to surrounding neighborhood.

LAWNS:

- Sod or seed new lawns. If seeded, pegged cloth or salt hay should be used to prevent erosion on slopes in excess of six percent. If lawn area is shady, seed or sod should include appropriate mix of fescues or other grasses, which will tolerate shade. The addition of five percent white clover to the seed mixture will produce a healthier lawn.
- Require the GC to maintain all lawns until after the first cutting.

Plantings: Select hardy, maintainable, regional stock. All plantings should be placed in a manner that enhances the appearance of the property and is in keeping with the surrounding neighborhood.

Attachments: Attachment G of DHCD's Qualified Allocation Plan (QAP)