



NCSHA 2011 Annual Program Awards

Capital Improvement Guidelines

“It’s an impressive document...” Sandra Desrosiers, Executive Director, Windsor Housing Authority, Windsor, Connecticut

“Thank you for sending the Guidelines ... they are very comprehensive.” Bruce L. Whitaker, Jr. of Millennium Real Estate Services, LLC

CHFA’s 2010 Capital Improvement Guidelines – An Overview

Unlike new construction, existing buildings which are typically much older, are riddled with unique challenges and potential problems which are rarely encountered with new buildings. To help overcome this immense challenge, the Connecticut Housing Finance Authority (CHFA) developed a new and unique approach to impart information to housing authorities, property owners and managers alike. In concert with CHFA’s previously established Design Standards, the *Capital Improvement Guidelines* were developed in 2010 as a “how-to” guide to enhance the quality, health and safety of the built environment of the communities they serve.

The Guidelines discuss in detail over fifty (50) different types of capital construction projects and renovations from straightforward appliance replacements or kitchen and bathroom renovations, to very complex capital improvements such as the installation of geothermal heating and cooling systems. These projects are typical improvements which could be encountered by any housing authority, owner or project manager of multi-family residential housing.

The Guidelines are divided into three sections depending on the complexity of the project involved. The first section is *Minor* renovation projects, which are more straightforward and require less skill to complete. *Moderate* renovation projects are the second group, which are more in-depth and have a higher potential for greater risk and associated problems. Lastly, *Major* capital improvements are included which are highly complex and specialized projects and in most cases, require the expertise of a building professional.

Each specific project is then discussed and a “Questions to Consider” portion is included to raise the awareness of those who are planning for that project to determine the full scope, or to simply raise questions that may be applicable to that specific situation. Sections on Bidding and Scope of Work descriptions are also included which raise questions to help the housing authorities, owners and property managers be more informed about the process and potential problems which may be encountered.

For example, roof replacements are very common capital improvement projects and in the Guidelines, a roof replacement is considered a moderate renovation project as some specialized knowledge is required. The Guidelines discuss all possible issues surrounding roof replacements such as environmental testing of the roof and flashing for possible asbestos or other environmental hazards, ‘green’ roof-design strategies, energy efficiency measures, water reclamation and grey water re-use of runoff, condition of the roof substructure, roof insulation R-values, adequacy of roof and attic ventilation through ridge and soffit venting, problems associated with water infiltration through the roof penetrations and/or skylights, condition and adequacy of size of the existing gutters and downspouts, condition of roof flashing, and the condition of any chimney(s). Since all of these issues must be considered and addressed for a successful roof replacement to occur, the Guidelines serve as a helpful reference tool for housing authorities, owners, property managers alike.

Who wrote the Capital Improvement Guidelines and who were they developed for?

Written by State of Connecticut licensed architects employed by CHFA, the Guidelines are meant to highlight potential building and construction issues concerning each unique renovation project. The Guidelines also discuss possible rebates and incentives offered through local utility companies and/or local, state and Federal government agencies that may be available for certain project types concerning energy efficiency or green building techniques.

The Guidelines were written for housing authorities, owners, property managers, and homeowners who are the customers of CHFA. The document is easy to read and is geared towards the 'lay-person' to assist in facilitating an understanding of the outlying issues and peripheral problems and challenges which may be encountered with any given capital improvement project.

Since many housing authorities, owners and property managers are faced with limited funding, CHFA understands that these limited funds must be spent in the most prudent way possible. The Guidelines are a tool used to reach out to these groups to better assist them and their projects, while recognizing their need for knowledge in the area of building construction.

Why were the Capital Improvement Guidelines developed?

Enhancing the quality of the existing buildings in the CHFA portfolio, while maintaining safety, health and welfare of their customers, is an important goal of the Guidelines. Most housing authorities and owners have limited funding, so the Guidelines were developed to communicate a base level of knowledge of building construction to its customers while also providing improved customer service. A better understanding of these potential building problems, issues and solutions by the housing authorities and owners, will help to create safer, healthier and more energy efficient buildings for the residents. The Guidelines also proved to be the perfect tool to communicate rebate and incentive opportunities to housing authorities, owners and property managers who may be in need of additional funding sources for much needed projects.

What have the Capital Improvement Guidelines accomplished?

The Guidelines continue to close the informational knowledge gap between housing authorities, owners and property managers and the building professionals in the field of architecture, engineering and construction. While the professional input of a licensed building professional cannot be underestimated, the Guidelines assist in imparting some building knowledge to cash-strapped housing authorities and owners alike. It is also a way to communicate potential funding sources such as rebates and incentives offered through local utility companies and government programs.

The document is written in plain language so that anyone can understand the concepts and points being addressed. It also serves to 'bridge-the-gap' between housing authorities and owners by creating a platform to discuss these various projects and capital improvements which arise each and every day. Also, since the Guidelines can be found on our website, they are an easy and quick reference tool, whenever needed.

Why the Capital Improvement Guidelines are exemplary and meet the NCSHA Award criteria

Original and Inventive

The Capital Improvement Guidelines are the first of its kind by a housing finance authority. The Guidelines are a tool specifically developed to help housing authorities and owners with limited funding and limited knowledge of building construction achieve superb construction and renovation projects which enhance the quality of life for their residents. The document was written with input from various housing authorities and property managers, to ensure that the Guidelines were user-friendly and addressed the customers' needs and concerns.

Reproducible by other Housing Authorities

These Guidelines can be easily reproduced and updated at any time, by any state agency involved with multi-family housing. Since the Guidelines are also included on the CHFA website, it is even quicker and easier to make updates and changes.

Reaches the CHFA Customers at a Minimal Cost with Maximum Benefit

Through the use of the “Email Blast” notification system developed by CHFA, all housing authorities, owners, and property managers can be instantly notified about the Guidelines and any changes that have been made to the document. The cost of developing this document was minimal, yet the benefits are immense since the Guidelines can be quickly and easily downloaded from the CHFA website and printed for individual use and reference. CHFA also provides housing authorities and property managers with a hard copy of the document during client and project meetings, as a way to further enhance its customer service through direct communication.

Conserves Energy and is Efficient with Existing Resources

By utilizing the CHFA website as a communication tool, this reduces the amount of printing needed and reduces costs and energy usage through the effective use of current technology. Also, since the document was written by in-house licensed architects employed by CHFA, no additional costs were incurred to produce the Guidelines.

Achieves CHFA strategic goals

Many housing authorities and property managers continue to write to CHFA commenting on the effectiveness of the document and its comprehensive nature of the various capital improvement projects. These Guidelines will continue to streamline the capital improvement process, with quicker and more effective feedback and input. One major strategic goal of CHFA is to provide enhanced, quicker and friendlier customer service to those served.

The Guidelines assist in achieving this goal as a tool to reach out to housing authorities, owners and property managers to foster an environment of open communication and dialog. The overall welfare of the residents of CHFA’s housing portfolio is paramount, and the Capital Improvement Guidelines are a major instrument to enhance the quality of life of the residents through a healthy, efficient and safe home environment.

Given the success of the *Capital Improvement Guidelines* for multi-family housing, CHFA is currently developing a Guidelines booklet for use with their single-family customers, which will address issues concerning the maintenance and repair of their own home. This new “quick-reference” tool will discuss weatherization, air infiltration problems, energy and water efficiencies and ‘green’ initiatives among other topics. This document is anticipated to be released in late summer 2011.

Conclusion

In today’s harsh economic climate, many housing authorities and property owners are facing considerable challenges concerning limited funding for inevitable construction and renovation projects needed for their existing buildings. In a proactive measure to combat this climate, CHFA developed the Capital Improvement Guidelines to impart construction knowledge and professional resources to their customers to assist in creating enhanced living environments for their residents through healthier, safer and more energy efficient ‘green’ buildings.

Attachments: The Capital Improvement Guidelines and CHFA website link and informational page.



Connecticut Housing Finance Authority

Capital Improvement
Guidelines – C.I.G.

2010

CONNECTICUT HOUSING FINANCE AUTHORITY



2010 Capital Improvements Repairs / Replacements / Installations

Introduction

Individual building materials, components, fabrications, and equipment for all proposed repair, replacement and capital improvement projects shall comply with the applicable section(s) of the current CHFA Standards of Design & Construction. However, when determining the scope of work for proposed repair, replacement and capital improvement projects, Owners and Property Managers are strongly encouraged to consider the interconnection of individual building materials, components, fabrications, and equipment that comprise a fully-functioning building. CHFA Technical Services has developed these "Capital Improvement Guidelines" (CIG) for various repair, replacement and capital improvement projects, which include "Questions to consider" – suggested related issues and conditions to be examined when replacing or installing additional individual building materials, components, fabrications, and equipment.

The CHFA Standards of Design and Construction ("Standards") define the design process and the specific requirements for multifamily housing financed through the Authority. It is the intent of the Standards to insure that housing financed through CHFA's multifamily lending programs best serves the needs of its residents with as much quality, safety, energy efficiency, durability, comfort, air quality, and environmental sustainability as the marketplace, resources and need will permit.

Some of the Standards are general, and are intended to be guidelines that must be applied to the local situation. It is acknowledged that individual developments may face unique site, design, financing or market constraints for which full compliance may be difficult, impractical or undesirable. It is further intended that such unique constraints are to be identified during the Design Review Process, and that the Developer request a Design Modification or Waiver. CHFA will consider such requests, on a case-by-case basis, to determine whether specific standards should be modified or waived, for reasons and purposes acceptable to the Authority.

The CHFA Standards of Design and Construction are not intended to reduce or circumvent the requirements current applicable Building Codes, and/or State and Local law. It is the responsibility of Owners/Property Managers, and their Professional Consultants (if required) to assure compliance of the design and construction with all required Codes and Standards.

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2010 Capital Improvements Repairs / Replacements / Installations

Instructions

The Capital Improvement Guidelines (C.I.G.) was developed by CHFA Technical Services for use by Owners, Property Managers, Developers, and other interested parties including internal CHFA staff members, when considering various repair, replacement and capital improvement projects. These Guidelines are meant to help and assist Owners and Property Managers with questions they may have regarding their specific project. The Guidelines promote a safe and healthy home environment as well as energy efficiency and 'green' building measures which conserve our natural resources.

Each specific repair, replacement or installation project includes a Review Checklist which provides detailed information about what Documents may be required, the Scope of Work description (if applicable), and Questions to Consider. The Review Checklist was created to assist interested parties in understanding the questions and concerns typically raised by CHFA Technical Services when reviewing similar repair, replacement or installation projects.

The *Documentation* that may be required by CHFA Asset Managers or Technical Services, includes items such as bids, drawings, specifications, structural or capital needs assessments, and environmental reports or testing for the specified capital improvement project.

The *Scope of Work* description describes the extent of the work to be performed for the repair or replacement project. This work description should match the description provided in the bids. The *Scope of Work* description is NOT required for all projects, as in some more complex cases, the project's drawings and specifications serve as the 'Scope of Work' description.

An important part of the Review Checklist is the *Questions to Consider* section. This section helps to clarify the appropriateness and extent of the proposed Scope of Work by posing questions which would be asked by a professional building design or construction professional when assessing the repair or replacement project. This section also references the corresponding sections of *CHFA Standards of Design and Construction* for additional information about the specific project. Since CHFA is a proponent of green design and energy-efficient design and methods, suggestions are offered about various sustainable, recyclable and renewable materials and ways to increase energy efficiency and natural resource conservation. As always, a safe and healthy living environment is of vital importance to CHFA.

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2010 Capital Improvements Repairs / Replacements / Installations

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Capital Improvements Repairs / Replacements / Installations

MINOR PROJECTS



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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Air-Conditioning units in existing sleeves replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 15610.5 Air Conditioning.
- b. Please consider energy-efficient equipment and building methods which promote a healthy and safe home environment.
- c. What is the condition of the existing sleeve and the sleeve flashing? Are there leaks apparent? Is replacement of the sleeve needed?
- d. Is there an insulated sleeve/unit cover for winter months?
- e. Are there air leaks into the apartment?
- f. What is the condition of the existing frame and trim? If wood, is it rotted or damaged?
- g. Is there any indication of water infiltration into the surrounding wall cavity?
- h. Is the existing electrical outlet and service sufficient for the new air-conditioning unit? Is the current service 60 or 100 amp per apartment? Is an upgrade needed to support the new units given the existing electrical load(s) of the apartments?

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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Bathroom cabinet / countertop / flooring replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 06240.1 Countertops, 09250 Gypsum Board and Ceramic Tile, and 11455 Kitchen and Bathroom Cabinets.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the material of the bathroom floor? Is it 9" x 9" vinyl tile? If so, this could possibly be VAT tile, i.e. asbestos tile flooring, and therefore testing and abatement may be required.
- d. If the new flooring will be installed over existing, is the existing flooring in good condition, or is there cracking and buckling?
- e. What is the condition of the bathroom sub-floor? Is moisture or water infiltration an issue which may have caused damage to the sub-floor or walls? If walls have sustained any water damage and require re-building, moisture and mold resistant gypsum board with cement backer board is required per *CHFA Standards*.
- f. Is mold visible or suspected?
- g. What is the condition of the gypsum wall and ceiling board?
- h. Does the floor have a floor drain? Is the existing pitch adequate for drainage?
- i. All electrical outlets shall be GFI and all should be tested and confirmed to be in good working condition. GFI's should be installed if there are none existing.
- j. Is the unit handicapped accessible? If so, are all the appropriate grab bars installed per code requirements? Does it have a 'roll-out' shower stall? If so, the new flooring and door threshold will need to meet code.
- k. 'Severe Use' cabinetry is required to be installed.
- l. Flooring shall be installed so as not to void the manufacturers warranty.



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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Bathroom plumbing fixtures / controls / fittings replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 10800 Bathroom Accessories, 15460 Plumbing Fixtures and Trim, and 15460.2 EPA WaterSense® program.
- b. Please consider water-efficient fixtures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Water-efficient fixtures shall be installed such as low-flow toilets and flow reducers for shower heads, bathtubs and lavatories.

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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Bathroom and Kitchen Exhaust Fans replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 11452.6 Bath Ventilation.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Has moisture, steam or water infiltration been an on-going issue which may have caused damage to the ceiling, walls and/or cabinetry? If walls or ceilings have sustained any moisture or water damage and require re-building, moisture and mold resistant gypsum board is required per *CHFA Standards*.
- d. What is the condition of the current venting? Is it adequate?
- e. *CHFA Standards* promotes the installation of one dual control for both lighting and exhaust fan venting.

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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Carpet replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 09681 Carpet and 06950 Resilient Flooring, and 09900.3 Low VOC Water-based Wood Finishes.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. CHFA Standards prefers hard floors rather than carpeting in dwelling units.
- d. If hardwood flooring is found to be existing under carpeting, and if it is salvageable, please consider refinishing the existing hardwood floor for greater aesthetics and health benefits to the residents.
- e. What is the condition of the sub-floor? Does the sub-floor need to be replaced or repaired, and to what extent? The replacement carpeting shall meet *CHFA Standards of Design and Construction*.
- f. When installing the carpeting and pad, they shall be installed to 'lay flat' under all heating elements, rather than 'rolling up' underneath the elements.

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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Electrical light fixtures and outlets repair / replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 06010.2 Compact Florescent Bulbs, 16500 General Lighting, and 16510 Interior Luminaires.
- b. Please consider energy-efficient, green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the condition of the surrounding ceiling and/or wall? Does the ceiling and/or wall need to be replaced or repaired, and to what extent?
- d. If the outlets are located in Bathrooms or Kitchens near water sources, the outlets shall be GFI. All existing GFI's shall be tested and confirmed to be in good working condition.
- e. Energy-efficient bulbs shall be used in all fixtures.
- f. Does the condition of the existing electrical wiring, boxes and switches support the new fixtures to be installed?
- g. Is an upgrade of the panel box from 60 to 100 amp needed? Does the panel have outdated fuses?



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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Exterior painting / caulking / weatherproofing

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 09900 Painting.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the condition of the exterior building component to be painted? If wood, is there any rot or other damage which will need to be repaired or replaced?
- d. Has the existing exterior paint been tested for lead?
- e. Has the existing caulking been tested for asbestos?
- f. If the existing painted exterior has areas of significant chipping, peeling and/or blistering of the paint, there may be a moisture infiltration problem and further investigation is needed to address the problem.
- g. If wood trim is being replaced, what is the condition of the flashing? Also, in lieu of wood trim, consider using PVC.
- h. Some rebates and incentives may be available through local utility companies for exterior shell weather-proofing.



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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Exterior storm door replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 08390 Doors.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the condition of the exterior door trim? If the door trim is wood, is there any rot or other damage which will need to be repaired or replaced?
- d. What is the condition of the existing door jamb? Are there cracks or areas where water infiltration is evident?
- e. What is the condition of the surrounding exterior wall, siding and sheathing?
- f. Has the existing exterior trim paint been tested for lead?
- g. Does the new storm door have a 'screen' option?



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Capital Improvements Repairs / Replacements / Installations

Review Checklist

Gutter system repair / replacement / installation

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 07710 Gutters and Downspouts.
- b. Please consider water-efficient, green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the condition of the existing roof? Is it due to be replaced?
- d. What is the condition of the fascia and flashing?
- e. If the gutters are being replaced, is the new gutter and downspout sizes and locations adequate for the anticipated rainwater?
- f. Will the downspouts end with a splashblock and/or extenders?
- g. Is the existing grade at the building graded away from the building foundation?
- h. Is a water-reclamation method possible to recycle rainwater for other uses within the building or for irrigation?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Kitchen Appliance replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 11452 Residential Appliances.
- b. Please consider energy-efficient appliances and building methods which promote a healthy and safe home environment.
- c. Are Energy Star appliances being installed?
- d. Is the existing space provided adequate in size for the new appliance?
- e. Some rebates and incentives may be available through the State or Federal government or utility companies for purchasing Energy Star appliances.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Kitchen cabinet / countertop / flooring replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 06240.1 Countertops, 09250 Gypsum Board and Ceramic Tile, and 11455 Kitchen and Bathroom Cabinets.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the material of the kitchen floor? Is it 9" x 9" vinyl tile? If so, this could possibly be VAT tile, i.e. asbestos tile flooring, and therefore testing and abatement may be required.
- d. If the new flooring will be installed over existing, is the existing flooring in good condition, or is there cracking and buckling?
- e. What is the condition of the kitchen sub-floor? Is moisture or water infiltration an issue which may have caused damage to the sub-floor or walls? If walls have sustained any water damage and require re-building, moisture and mold resistant gypsum board with cement backer board is required per *CHFA Standards*.
- f. Is mold visible or suspected?
- g. What is the condition of the gypsum wall and ceiling board?
- h. Does the floor have a floor drain? Is the existing pitch adequate for drainage?
- i. All electrical outlets shall be GFI and all should be tested and confirmed to be in good working condition. GFI's should be installed if there are none existing.
- j. Is the unit handicapped accessible? If so, the new flooring and door threshold will need to meet code.
- k. In units designed as barrier-free and also for the elderly, cabinetry shall meet accessibility codes for design and clearances. Also, lever handles shall be used at doors.
- l. 'Severe Use' cabinetry is required to be installed.
- m. Flooring shall be installed so as not to void the manufacturers warranty.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Kitchen plumbing fixtures / controls / fittings replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 15460 Plumbing Fixtures and Trim, and 15460.2 EPA WaterSense® program.
- b. Please consider water-efficient fixtures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Water-efficient measures shall be considered such as flow reducers for sinks.
- d. Spray hoses are not recommended due to the possibility of leaks.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Masonry re-pointing, minor brick replacement and joint repair

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 04000 Unit Masonry.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Is there evidence of efflorescence on the brick wall (white staining which is evidence of water infiltration within the brick wall cavity)? If so, further investigation may be needed to determine the cause of water infiltration.
- d. Are the weep holes clogged? Are weep holes even installed in the brick coursing?
- e. If there are existing cracks in the brick wall, has the crack widened or lengthened over time? If so, a structural analysis may be required to investigate and determine the cause of the cracking.
- f. What is the condition of the flashing?
- g. What is the condition of the lintels? Are the lintels rusted? Is mortar missing from the joint at the lintel?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Pool / tennis court / fitness center / playground repair / replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider water-efficient fixtures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Is there any significant cracking on the walls or slab which have widened or lengthened over time? If so, a structural analysis may be required to investigate and determine the cause of the cracking.
- d. Is ponding and/or site drainage an issue?
- e. Is the existing pool leaking? Does the pool have a fence around it which meets code for safety?
- f. Is the existing playground safe and stable? Is the play equipment age-appropriate and barrier-free for use by children of all abilities? Is the surface under the play equipment suitable? Does the surface meet code requirements? Sand is NOT an appropriate surface. Many recycled 'green' materials are available which meet code requirements and also provide a good and safe surface under play equipment.
- g. Does the fitness equipment have the appropriate safety devices installed?
- h. Is the existing electrical service adequate for the new equipment and usage?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Power washing of exterior building elements

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. What is the condition of the exterior building components to be power washed? If wood, is there any rot or other damage which will need to be repaired or replaced?
- c. Has the existing exterior paint been tested for lead?
- d. What is the condition of the flashing? Have leaks been reported at doors and windows, and flashings?
- e. If power washing vinyl siding, spray at a perpendicular and downward angle to the siding to avoid water infiltration under the siding.

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Security systems – repair / replacement

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16720 Alarms and Detection and 16722 Building Security.
- b. What is the testing schedule?
- c. If cameras are used, verify that there are no 'blind spots'.
- d. What is the procedure for fob security, if a key fob is lost?
- e. Verify that the new equipment can be accommodated by the existing electrical service.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Tree / bush / shrub trimming or removal

Required common documents for Asset Management file: Bids and Scope of Work

1. Documentation of three (3) bids

- a. Typically three (3) bids are solicited for the work to be completed.
- b. Verify the range of the bids received. Is there a wide discrepancy? If so, why?
- c. How long are the bids good for and do they expire?
- d. Are the bidders licensed Connecticut contractors licensed to perform the work they have bid upon?
- e. Low bidder is commonly recommended unless otherwise specified.

2. Scope of Work description

- a. Describes the extent of the work to be performed.
- b. The description provided in the three (3) bids shall reflect a clear understanding of the contractor of the nature and scope of the work to be performed and should match the Owner's scope of work description.
- c. Is the timeframe to complete the work acceptable?

3. Questions to consider

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Where is the tree located? Verify the appropriate clearance needed given existing overhead wires and poles, structures and vehicles.
- c. Verify the existing utility locations underground if digging is needed. Be aware of overhead lines and poles.
- d. Be sure to create a safe zone for tree removal work, with barriers in place for the tree fall zone.
- e. Plan for the removal of the tree debris and clean-up.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

MODERATE PROJECTS



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Air conditioning units in new sleeves installation

Possible required documents for Technical Services Air conditioning units in new sleeves review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 15610.5 Air Conditioning.
- b. Please consider energy-efficient equipment and building methods which promote a healthy and safe home environment.
- c. What is the condition of the existing sleeve and the sleeve flashing? Are there leaks apparent? Is replacement of the sleeve needed?
- d. Is there an insulated sleeve/unit cover for winter months?
- e. Are there air leaks into the apartment?
- f. What is the condition of the existing frame and trim? If wood, is it rotted or damaged?
- g. Is there any indication of water infiltration into the surrounding wall cavity?
- h. Is the existing electrical outlet and service sufficient for the new air-conditioning unit? Is the current service 60 or 100 amp per apartment? Is an upgrade needed to support the new units given the existing electrical load(s) of the apartments?

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Air conditioning equipment and systems (roof top) repair, replacement, installation

Possible required documents for Technical Services Air conditioning equipment (roof top) review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 15610.5 Air Conditioning.
- b. Please consider energy-efficient equipment and building methods which promote a healthy and safe home environment.
- c. What is the condition of the roof? Roof drains? Roof penetrations?
- d. If the roof has a parapet wall, what is the condition of the parapet?
- e. What is the condition of the roof flashing?
- f. If the dunnage or curb is existing, what is its condition? Are repairs needed?
- g. Is the roof structure able to support the new loads of the equipment?
- h. Is the existing electrical service adequate to support the new equipment?
- i. What is the condition of the ductwork and plumbing connections?
- j. Some rebates or incentives may be available for installing energy efficient cooling systems.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Asphalt roof shingle repair / replacement / installation

Possible required documents for Technical Services Asphalt Roof shingle repair, replacement, installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 07200 Attic Ventilation, 07248 Insulation, 07310 Asphalt Shingles, 07710 Gutters and Leaders, 07920 Sealants and Caulking, and 08001 Window Design.
- b. Please consider 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. Does this project allow for water reclamation possibilities from the storm water runoff for use in irrigation or recycled grey-water reuse within the building to flush toilets etc.?
- d. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, etc.?
- e. What is the age of the existing roof?
- f. How many layers of asphalt shingles are presently installed on the roof?
- g. May hazardous materials be present such as asbestos?
- h. What is the condition of the roof insulation, fascia and/or soffit?
- i. Is the existing roof / attic ventilation adequate? Are there attic louvers, ridge venting and soffit venting? What is the condition of these elements?
- j. Are there skylights? What is the condition of the skylights?
- k. Is there any evidence of water infiltration at the roof penetrations?
- l. What is the condition of the gutters and leaders? Are they sized adequately for the storm water runoff?
- m. What is the condition of the flashing at the roof and the flashing at the chimney?
- n. What is the condition of the chimney?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Bathroom and Kitchen exhaust fan system installation

Possible required documents for Technical Services Exhaust fan installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 11452.6 Bath Ventilation.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Has moisture, steam or water infiltration been an on-going issue which may have caused damage to the ceiling, walls and/or cabinetry? If walls or ceilings have sustained any moisture or water damage and require re-building, moisture and mold resistant gypsum board is required per *CHFA Standards*.
- d. What is the condition of the current venting? Is it adequate?
- e. *CHFA Standards* promotes the installation of one dual control for both lighting and exhaust fan venting.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Built-up roofing repair, replacement and installation

Possible required documents for Technical Services Built-up roofing repair, replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 07200 Attic Ventilation, 07248 Insulation, 07500 Membrane Roofing, 07920 Sealants and Caulking, and 08001 Window Design.
- b. Please consider 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. Does this project allow for water reclamation possibilities from the storm water runoff for use in irrigation or recycled grey-water reuse within the building to flush toilets etc.?
- d. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, metal decking, concrete, etc.?
- e. What is the age of the existing roof?
- f. May hazardous materials be present such as asbestos?
- g. What is the condition of the roof insulation, fascia and/or soffit or parapet?
- h. What is the R value of the existing insulation and is it adequate and to code?
- i. Is the existing roof ventilation adequate? Are there roof vents and soffit venting? What are the condition of these elements?
- j. Are there skylights? What is the condition of the skylights?
- k. Is there any evidence of water infiltration at the roof penetrations?
- l. What is the condition of the roof drains? Are they sized adequately for the storm water runoff? Are the number of drains adequate? Are the roof drains maintained and cleaned regularly of debris?
- m. Are secondary roof drains present such as scuppers?
- n. What is the condition of the flashing at the roof and the flashing at the chimney?
- o. What is the condition of the chimney?
- p. What is the condition of any roof-top curbs or dunnage?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Electrical service repair, replacement and installation

Possible required documents for Technical Services Electrical service repair, replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16300 Electrical Service, 16740 Telecommunications Systems, 16760 Intercommunication, 16780 Television Systems.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- d. Is an upgrade of the panel box from 60 to 100 amp needed? Does the panel have outdated fuses? Is an overall upgrade needed? If so, please refer to Classification C – Electrical Upgrade.
- e. Does the cable and/or telephone systems need to be updated as well?
- f. Are GFI outlets installed?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Exterior door replacement and installation

Possible required documents for Technical Services Exterior door replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 08100 Doors, 08320 Aluminum and Glass Entrance and 08710 Handicapped Lever handles.
- b. Please consider energy-efficient products, and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the condition of the exterior door trim? If the door trim is wood, is there any rot or other damage which will need to be repaired or replaced?
- d. What is the condition of the existing door jamb? Are there cracks or areas where water infiltration is evident?
- e. What is the condition of the surrounding exterior wall, siding and sheathing?
- f. Has the existing exterior trim paint been tested for lead?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Exterior siding repair, replacement and installation

Possible required documents for Technical Services Exterior siding repair, replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 07460 Siding, 07650 Flashing, and 07920 Sealants and Caulking.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the condition of the exterior building components, such as trim and fascia boards etc? If wood, is there any rot or other damage which will need to be repaired or replaced?
- d. What is the age of the siding? Is the existing siding asbestos?
- e. What is the general condition of the doors and windows and the flashing at each?
- f. Why is the existing siding being repaired or replaced? Is there damage to the exterior wall cavities?
- g. Has the existing exterior paint been tested for lead?
- h. Has the existing caulking been tested for asbestos?
- i. If the existing painted exterior has areas of significant chipping, peeling and/or blistering of the paint, there may be a moisture infiltration problem and further investigation is needed to address the problem.
- j. If wood trim is being replaced, what is the condition of the flashing? Also, in lieu of wood trim, consider using PVC.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Hard-wired smoke detector system / carbon monoxide detector system installation

Possible required documents for Technical Services Smoke detector / Carbon monoxide detector system installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16720 Alarm and Detection Systems.
- b. Please consider energy-efficient products and equipment, and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Is the existing wiring and equipment capable of supporting the new system?

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Heating equipment / controls repair, replacement and installation

Possible required documents for Technical Services Heating equipment / controls repair, replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 15610 HVAC Design, 15800 Air Distribution, 15810 Ductwork and Flues, 15900 Mechanical Controls, and 15990 Testing and Balancing.
- b. Please consider energy-efficient equipment, and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the energy-efficiency of the new system being proposed?
- d. Has the chimney been inspected for leaks?
- e. Is there adequate draft?
- f. Are the existing controls up-to-date and programmable? Or should they be replaced?
- g. Some rebates or incentives may be available for installing energy efficient heating equipment.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Hot water heaters / controls replacement and installation

Possible required documents for Technical Services Hot water heaters / controls replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 15470 Water Heaters.
- b. Please consider energy-efficient equipment and methods, and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the energy-efficiency of the new hot water system being proposed?
- d. Some rebates and incentives may be available through the State or Federal government for installing energy efficient water heaters.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Single-ply roofing repair, replacement and installation

Possible required documents for Technical Services Single-ply roofing repair, replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 07200 Attic Ventilation, 07248 Insulation, 07500 Membrane Roofing, 07920 Sealants and Caulking, and 08001 Window Design.
- b. Please consider energy-efficient, 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. Does this project allow for water reclamation possibilities from the storm water runoff for use in irrigation or recycled grey-water reuse within the building to flush toilets etc.?
- d. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, metal decking, concrete deck, etc.?
- e. What is the age of the existing roof?
- f. May hazardous materials be present such as asbestos?
- g. What is the condition of the roof insulation, fascia and/or soffit or parapet?
- h. What is the R value of the existing insulation and is it adequate and to code?
- i. Is the existing roof ventilation adequate? Are there roof vents and soffit venting? What is the condition of these elements?
- j. Are there skylights? What is the condition of the skylights?
- k. Is there any evidence of water infiltration at the roof penetrations?
- l. What is the condition of the roof drains? Are they sized adequately for the storm water runoff? Are the number of drains adequate? Are the roof drains maintained and cleaned regularly of debris?
- m. Are secondary roof drains present such as scuppers?
- n. What is the condition of the flashing at the roof and the flashing at the chimney?
- o. What is the condition of the chimney?
- p. What is the condition of any roof-top curbs or dunnage?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Site paving repair, replacement and installation **Including parking areas and sidewalks**

Possible required documents for Technical Services Site paving repair, replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 03001 Concrete Design and 03010 Concrete Materials.
- b. Please consider energy-efficient, 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the sub-soil condition? Has a soil report been developed for the site?
- d. The existing site drainage must be evaluated for its condition and any possible deficiencies.
- e. What is the traffic flow, parking layout and existing curbs condition?
- f. What is the condition of the sidewalks?
- g. Is the site handicapped accessible and barrier-free?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Window replacement and installation

Possible required documents for Technical Services Window replacement and installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 08001 Window Design.
- b. Please consider energy-efficient products, 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. Are the new windows energy-efficient?
- d. What is the condition of the window flashing?
- e. Has water infiltration at the windows been a problem or is it suspected? If so, the exterior wall cavity may be damaged, therefore further investigation may be needed.
- f. What is the condition of the gypsum board walls and paint around the window areas? Is the paint chipping or bubbling? If so, water infiltration may be an issue which warrants further investigation.
- g. What is the condition of the interior and exterior window trim? Will the trim be replaced?
- h. The new window style shall be similar in appearance and aesthetics to that of the old windows.
- i. If the windows are to be replaced in a complex served by the elderly, is minimal force required to open, close and lock the windows?
- j. Some rebates or incentives may be available for installing energy efficient windows.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

MAJOR PROJECTS



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Antenna; i.e. cell tower installation

Possible required documents for Technical Services Antenna; i.e. cell tower installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient equipment, 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. What permits are required for this installation? What are the code requirements?
- d. Does the project need to be reviewed and approved by Planning and Zoning for height restrictions, etc.?
- e. What is the aesthetic impact of the installation on the building and neighborhood's appearance?
- f. A structural assessment will need to be completed due to the increased roof, wind and lateral loading on the structure.
- g. What roof penetrations are required? All new roof penetrations shall be adequately flashed.
- h. What is the age of the existing roof? How and when will the existing roof be replaced with the new equipment in place? Will the new equipment need to be un-assembled and re-assembled after the new roof is installed?
- i. Where will the equipment be located? On the roof? On the site? Consideration will need to be given for each possibility to determine the best location given the existing roof and site constraints.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Asbestos / lead-based paint / mold removal / abatement

Possible required documents for Technical Services Asbestos / lead-based paint / mold removal / abatement review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 00045 Environmental / Hazardous Materials Design Concerns.
- b. Please refer to *CHFA Standards of Design and Construction, Appendix D: CHFA Environmental / Hazardous Materials Review Guidelines*.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Building or site structural repairs / replacement

Possible required documents for Technical Services Building or site structural repairs / replacement review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. What is the cause of the structural problem at the building or site?
- c. Is water infiltration part of the on-going problem?
- d. Is the problem related to heaving soil or soil settlement?
- e. An evaluation by a Professional Engineer, P.E., is required to determine the underlying cause and recommended remedy to address the problem, which shall be submitted to Technical Services for review and comment.
- f. The final drawings shall also be submitted to Technical Services for review and comment.
- g. Is the scope of work to be insured?
- h. All existing reports, logs, and on-going condition histories shall be investigated and submitted to Technical Services for review.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Commercial space build-out

Possible required documents for Technical Services Commercial space buildout review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient equipment and products and 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the nature of the commercial space?
- d. Zoning review and approval may be required due to a possible change in use.
- e. Is the building zoned for commercial use? Research may be required.
- f. Are systems upgrades needed to support the new commercial use?
- g. Is the space accessible and barrier-free? If not, what are the site and building limitations?
- h. What are the parking requirements for the new use? Is parking available?
- i. Are there special equipment needs for the new commercial use? Such as a grease-trap, etc.?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Contaminated / polluted soil / groundwater remediation

Possible required documents for Technical Services Contaminated / polluted soil / groundwater remediation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 00045 Environmental / Hazardous Materials Design Concerns, and 00053 Soil Borings Reports.
- b. Please refer to *CHFA Standards of Design and Construction, Appendix D: CHFA Environmental / Hazardous Materials Review Guidelines*.
- c. What is the origin of the contamination and/or pollution? Has the source been identified and removed?
- d. Are there existing wells or septic systems on the site?
- e. All existing Health Department reports shall be gathered and compiled for the project.
- f. What chemical testing was completed by the local Health Department, DEP and/or EPA?
- g. Is the site considered to be an EPA 'Superfund' site?
- h. The remediation plan shall be submitted to Technical Services for review and comment.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Cooling plants for buildings (includes cooling towers, piping and ductwork) repair / replace / install

Possible required documents for Technical Services Cooling plants for buildings review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient equipment and products and 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the type of cooling system proposed? Geothermal?
- d. What is the efficiency rating of the proposed system?
- e. What is the existing system being replaced?
- f. Where will the cooling equipment be located? On the roof? On the site? Consideration will need to be given for each possibility to determine the best location given the existing roof and site constraints.
- g. What permits are required for this installation? What are the code requirements?
- h. Does the project need to be reviewed and approved by Planning and Zoning for height restrictions, etc.?
- i. What is the aesthetic impact of the installation on the building and neighborhood's appearance?
- j. A structural assessment will need to be completed due to the increased roof, wind and lateral loading on the structure.
- k. What roof penetrations are required? All new roof penetrations shall be adequately flashed.
- l. What is the age of the existing roof? How and when will the existing roof be replaced with the new equipment in place? Will the new equipment need to be un-assembled and re-assembled after the new roof is installed?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Decking/balcony repair/replacement (>24" above finished grade)

Possible required documents for Technical Services Decking / balcony repair /replacement review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information including the following sections: 06430 Wood Stairs and Railings, 06430.1 Handrails and 06430.2 Guards.
- b. Please consider 'green' and recycled materials and building methods which promote a healthy and safe home environment.
- c. Please refer to *Prescriptive Residential Wood Deck Construction Guide*, Based on the 2009 International Residential Code - © 2010 American Forest & Paper Association, Inc. This guide applies to single-level residential wood decks only.
- d. The new deck and/or balcony including handrails and guardrails shall meet all current building and fire codes.
- e. Why is the new deck being repaired or replaced? What is the cause of the problem?
- f. The new deck and/or balcony structure must meet all applicable structural loading requirements, including live and dead loads, such as snow, wind, seismic and lateral loading.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Electrical Service upgrade

Possible required documents for Technical Services Electrical Service upgrade review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16300 Electrical Service.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Where is the electrical service located? Above or below ground? If below ground, all underground utility locations shall be determined and avoided. Call Before You Dig.
- d. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- e. Does the cable and/or telephone systems need to be updated as well?
- f. Are GFI outlets installed at all 'wet' areas?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Electrical Switchgear repair / replacement

Possible required documents for Technical Services Electrical Switchgear repair / replacement review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16300 Electrical Service.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Where is the electrical service located? Above or below ground? If below ground, all underground utility locations shall be determined and avoided. Call Before You Dig.
- d. What is the compatibility of the existing system and new system?
- e. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- f. Does the cable and/or telephone systems need to be updated as well?
- g. Are GFI outlets installed?

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Elevator repair / upgrade / replacement

Possible required documents for Technical Services Elevator repair / upgrade / replacement review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16200 Emergency Generator and 16300 Electrical Service.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Is the new cab compatible with the existing system and shaft?
- d. What are the ventilation requirements of the new elevator? Is air-conditioning of the elevator mechanical room required?
- e. Is a pit drain existing and/or required?
- f. What is the alternate source of power? Is an emergency generator required? Is it diesel powered?
- g. Assure that the cab size and controls are handicapped accessible and meet current codes.
- h. Where is the elevator mechanical room located? If the elevator mechanical room is located on the roof; what is the condition of the room? The exterior envelope condition and roof condition?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Emergency generator repair / replacement / installation

Possible required documents for Technical Services Emergency generator repair / replacement / installation review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16200 Emergency Generator and 16300 Electrical Service.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Is the new generator properly sized for the existing and future load requirements and amperage?
- d. What is fuel source of the generator? Is it diesel powered?
- e. Are fuel tanks required? If so, where will they be located?
- f. Where will the generator be located? What is the condition of the site where it will be located?
- g. The generator must be enclosed and fenced adequately due to safety requirements. In addition to fencing, are bollards needed if located near a drive aisle or parking area?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Energy-efficiency upgrades (building components / systems)

Possible required documents for Technical Services Energy-efficiency upgrades review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Contact CL&P, UI, Yankee Gas and SCG for subsidies and technical support for energy-efficiency programs.
- d. Contact Connecticut Clean Energy Fund for program and incentive information.
- e. Is the existing system infrastructure compatible with the new system?
- f. Some rebates or incentives may be available through State and Federal government programs for installing energy efficient upgrades.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Exterior fire-escape repair/replacement

Possible required documents for Technical Services Exterior fire-escape review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. The new fire-escape shall meet all current building and fire codes.
- d. Are the windows leading to the fire escape also code compliant for egress sizing?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Exterior masonry repairs where movement cracks are apparent

Possible required documents for Technical Services Exterior masonry repairs review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 04000 Unit Masonry.
- b. Please consider green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Is there evidence of efflorescence on the brick wall (white staining which is evidence of water infiltration within the brick wall cavity)? If so, further investigation may be needed to determine the cause of water infiltration.
- d. Are the weep holes clogged? Are weep holes even installed in the brick coursing?
- e. If there are existing cracks in the brick wall, has the crack widened or lengthened over time? If so, a structural analysis may be required to investigate and determine the cause of the cracking.
- f. What is the condition of the flashing?
- g. What is the condition of the lintels? Are the lintels rusted? Is mortar missing from the joint at the lintel?

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Geothermal heating / cooling system installation

Possible required documents for Technical Services Geothermal heating / cooling system review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Contact CL&P, UI, Yankee Gas and SCG for subsidies and technical support for energy-efficiency programs.
- d. Contact Connecticut Clean Energy Fund for program and incentive information.
- e. Is the existing system infrastructure compatible with the new system?
- f. Has soil testing been done for possible soil contamination?
- g. Some incentives may be available for installing geothermal heating and cooling systems.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Heat / Fire / Smoke suppression systems

Possible required documents for Technical Services Heat / Fire / Smoke suppression systems review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections:
16720 Alarm and Detection Systems.
- b. Please consider energy-efficient products and equipment, and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Is the existing wiring and equipment capable of supporting the new system?

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Heating plants (includes boilers / furnaces and associated piping / ductwork and chimney / flues)

Possible required documents for Technical Services Heating plants review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 15610 HVAC Design, 15800 Air Distribution, 15810 Ductwork and Flues, 15900 Mechanical Controls, and 15990 Testing and Balancing.
- b. Please consider energy-efficient equipment, and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. What is the energy-efficiency of the new system being proposed?
- d. Has the chimney been inspected for leaks?
- e. Is there adequate draft?
- f. Are the existing controls up-to-date and programmable? Or should they be replaced?

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Parking structure repair / modification

Possible required documents for Technical Services Parking structure review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. What is the cause of the structural problem at the parking structure?
- c. Is water infiltration part of the on-going problem?
- d. An evaluation by a Professional Engineer, P.E., is required to determine the underlying cause and recommended remedy to address the problem, which shall be submitted to Technical Services for review and comment.
- e. The final drawings shall also be submitted to Technical Services for review and comment.
- f. Is the scope of work to be insured?
- g. All existing reports, logs, and on-going condition histories shall be investigated and submitted to Technical Services for review.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Photo-voltaic / solar thermal system installation

Possible required documents for Technical Services Photo-voltaic / solar thermal system review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Contact CL&P, UI, Yankee Gas and SCG for subsidies and technical support for energy-efficiency programs.
- d. Contact Connecticut Clean Energy Fund for program and incentive information.
- e. Is the existing system infrastructure compatible with the new system?
- f. Where will the new system be located? On the roof or at grade?
- g. If located on the roof, what is the age of the roof? When will the roof need to be replaced? Will the system need to be un-assembled and then re-assembled after the new roof is installed?
- h. If located at grade, what site constraints are present? Will the system disturb any underground utilities? If so, call utilities to locate lines – Call Before You Dig.
- i. Some rebates or incentives may be available through local utility companies or the State or Federal government for installing PV systems.



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Septic System repair/replacement/installation

Possible required documents for Technical Services Septic system review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Are there existing wells or septic systems on the site?
- d. All existing Health Department reports shall be gathered and compiled for the project.
- e. What chemical and/or soil testing was completed by the local Health Department, DEP and/or EPA?



CONNECTICUT HOUSING FINANCE AUTHORITY

Capital Improvements Repairs / Replacements / Installations

Review Checklist

Site grading and retaining wall repair/replacement/installation

Possible required documents for Technical Services Site grading and retaining wall review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information.
- b. What is the cause of the structural problem at the retaining wall?
- c. Is site drainage a problem?
- d. Is water infiltration part of the on-going problem?
- e. An evaluation by a Professional Engineer, P.E., is required to determine the underlying cause and recommended remedy to address the problem, which shall be submitted to Technical Services for review and comment.
- f. The final drawings shall also be submitted to Technical Services for review and comment.
- g. Is the scope of work to be insured?
- h. All existing reports, logs, and on-going condition histories shall be investigated and submitted to Technical Services for review.

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Site utility (storm/sanitary drainage system, and electric / gas / phone / cable line) work

Possible required documents for Technical Services Site utility review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 16300 Electrical Service.
- b. Please consider energy-efficient measures and green, renewable and/or recycled materials and building methods which promote a healthy and safe home environment.
- c. Where are the utilities and electrical services located? Above or below ground? If below ground, all underground utility locations shall be determined and avoided. Call Before You Dig.
- d. What is the compatibility of the existing system and new system?
- e. What is the condition of the existing electrical wiring, conduit, boxes and switches?
- f. Do the cable and/or telephone systems need to be updated as well?

CONNECTICUT HOUSING FINANCE AUTHORITY



Capital Improvements Repairs / Replacements / Installations

Review Checklist

Underground Storage Tanks (UST) replacement

Possible required documents for Technical Services Underground Storage Tank (UST) review:

1. Drawings – plans, elevations and/or details
2. Project Manual / Specifications
3. Structural Assessment
4. Capital Needs Assessment
5. Environmental Reports / Testing

Questions to consider:

- a. Please refer to *CHFA Standards of Design and Construction* for additional information on the following sections: 00045 Environmental / Hazardous Materials Design Concerns, and 00053 Soil Borings Reports.
- b. Please refer to *CHFA Standards of Design and Construction, Appendix D: CHFA Environmental / Hazardous Materials Review Guidelines*.
- c. Is the UST leaking or is it suspected of leaking?
- d. Are there existing wells or septic systems on the site?
- e. All existing Health Department reports shall be gathered and compiled for the project.
- f. What chemical testing was completed by the local Health Department, DEP and/or EPA?
- g. Is the site considered to be an EPA 'Superfund' site?
- h. The remediation plan shall be submitted to Technical Services for review and comment.