CONNECTICUT HOUSING FINANCE AUTHORITY

Unlocking Solutions, Building Strong Communities.

# Connecticut Housing Finance Authority

## Construction Guidelines: Architectural & Construct Services / Asset Management and Capital Improvement Guide (CIG)

2027

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## Introduction

The Construction Guidelines: Architectural & Construction Services / Asset Management and Capital Improvement Guide **(CIG)** were developed by CHFA for use by owners, property managers, developers, and other interested parties including internal CHFA staff members, to provide assistance when considering various repair, replacement reserve requests and capital improvements to projects that have been financed by CHFA and are in the CHFA portfolio and apply to properties where CHFA is holding the replacement reserves. These guidelines are meant to assist them with the CHFA process for reviewing specific projects and the questions that may arise. In addition, these guidelines reflect the current Multifamily Design and Construction Standards – CHFA **(the Standards)** which promote safe and healthy home environments, as well as energy-efficiency and "green" building measures.

## Architectural & Construction Services/Asset Management Guide

The following provides guidance for three different types of Capital Improvement Projects **(CIP)**:

Classification A, minor repairs; owners/property managers generally coordinate this work;
Classification B, minimal rehabilitation; may require an architect/engineer; and,
Classification C, capital improvements/large scale repairs generally require an architect/engineer.

Depending on the type of classification, CHFA may require one or more of the following: the Owner (O), a CT-licensed/insured Building and/or Home Inspector, or HUD-approved Inspector (I), insured FHA 203K Compliance Consultant (C), Architect (A), Professional Engineer (PE), Licensed Environmental Consultant (LEC), or Approved Vendor (AV) to be actively engaged in the process.

CHFA prefers the use of design professionals (A and PEs), whenever possible, to determine and develop the scope of work to be included in the bid documents, coordinate bids and certify that the work has been completed in accordance with current building codes and the Standards. CHFA

the right to require a design professional on any and all replacement/repair construction projects, subject to the scope and complexity of the proposed project.

**I.** **Classification A** (minor repairs or one-for-one replacements of specified building components) – see list of items and descriptions under CIG section.

A. If the Owner will be completing any of the Capital Improvement Projects (CIP) listed under CIG section Classification A, the Owner may certify that the work has been completed in accordance with applicable building codes, Local, State and Federal regulations and the Standards.

**II.** **Classification B** (minimal rehabilitation) - see list of items and descriptions under CIG section.

A. **Classification B.1**
If the Owner will be completing any of the CIP listed under CIG section, Classification B, and cost of work for the CIP is less than $25,000, the Owner may certify that the work has been completed in accordance with applicable building codes, Local, State and Federal regulations and the Standards.

B. **Classification B.2**
If the Owner will be completing any of the CIP listed under CIG section Classification B, and cost of work for the CIP is equal to or greater than $25,000, the Owner must retain:

1. Building design professional/consultant to determine the scope of work, prepare the bid solicitation documents, and certify that the work has been completed in accordance with applicable building codes, Local, State and Federal regulations and the Standards.

2. Appropriate contractor: for general scope projects a Major Contractors License will be required; for all trade specific scopes trade contractor with the appropriate license will be required.

   For certain one-for-one replacements of building components the above requirements may be modified at the discretion of ACS, contingent upon receiving proper back-up documentation to support the rationale and shall be communicated to the team.

   If the Owner will be completing any work listed above under Classification A and/or B.1 in conjunction with a CIP listed under Classification B.2, the building design professional will include the Classification A and/or B.1 work in the Classification B.2 project scope of work and bid solicitation documents, and certify that the proposed scope of work will be/has been planned and designed in accordance with applicable building codes, State and Federal regulations and the Standards.

**III.** **Classification C** (capital improvements/large scale repairs) - see list of items and descriptions under CIG section, Classification C. The Owner must retain:

A. Building design professional to determine the scope of work, prepare the bid solicitation documents, and certify that the work will be/has been planned and designed in accordance with applicable building codes, Local, State and Federal regulations and the Standards, regardless of the anticipated cost.

B. Appropriate contractor: for general scope projects a Major Contractors License will be required; for all trade specific scopes trade contractor with the appropriate license will be required.

   For certain one-for-one replacements of building components the above requirements may be modified at the discretion of ACS, contingent upon receiving proper back-up documentation to support the rationale and shall be communicated to the team.

   If the Owner will be completing any work listed above under Classification A and/or B in conjunction with a CIP listed under Classification C, the building design professional will include the Classification A and/or B work in the Classification C project scope of work and bid solicitation documents, and certify that the proposed scope of work will be/has been planned and designed in accordance with applicable building codes, Local, State and Federal regulations and the Standards.

## IV. CHFA Approval Process

CHFA's Asset Management Department and Owner are to refer to the list of items and descriptions for each classification under Capital Improvement Guide (CIG) section to determine the proper Classification (A, B, or C) for the provided application. Please review the questions/considerations for each scope of work to identify the level of review required, if any questions or concerns remain please consult CHFA ACS Department.

## A. Classification A

1. If the cost of work for the CIP is less than $25,000, CHFA does not need to be involved. If the cost of work for the CIP will be greater than $25,000, the Owner submits CHFA Escrow Release Pre-Approval Form HM 6-21 for the CIP to CHFA's Asset Management Department for approval, along with the proposed scope of work and three (3) bid quotes. Ensure scope of work identified in bid quotes is consistent with one another. The Owner must sign the certification statement indicating that the proposed scope of work will be/has been planned, designed and completed in accordance with current building codes, Local, State and Federal regulations and the Standards. If the CIP falls under Replacement Reserve Descriptive Codes A-2, A-9 or A-10 per CHFA Form HM 6-22, the submission must also include a Capital Improvement Schedule for Extensive Replacement.
2. Upon completion of the approved project, the Owner submits CHFA Request to Release Escrow Funds Form HM 6-24. The Owner must sign the certification statement indicating that the proposed scope of work has been planned, designed and completed in accordance with current building codes, Local, State and Federal regulations and the Standards

## B. Classification B.1

1. The Owner submits CHFA Escrow Release Pre-Approval Form HM 6-21 for the CIP to CHFA's Asset Management Department for approval, along with the proposed scope of work and three (3) bid quotes. Ensure scope of work identified in bid quotes is consistent with one another. The Owner must sign the certification statement indicating the that the proposed scope of work will be/has been planned, designed and completed in accordance with current building codes, Local, State and Federal regulations and the Standards. If the CIP falls under Replacement Reserve Descriptive Codes A-2, A-9 or A-10 per CHFA Form HM 6-22, the submission must also include a Capital Improvement Schedule for Extensive Replacement.
2. Upon completion of the approved project, the Owner submits CHFA Request to Release Escrow Funds Form HM 6-24. The Owner must sign the certification statement indicating that the proposed scope of work has been planned, designed and completed in accordance with current building codes, Local, State and Federal regulations and the Standards.

## C. If the CIP includes multiple requests and:

1. If all the requests in the CIP fall under Classification A or Classification B.1, approval from CHFA ACS Department is not required, unless it involves environmental/ hazardous materials remediation.
2. If one or more requests in the CIP fall under Classification B.2 or Classification C, approval from CHFA ACS Department is required. All relevant project information and required documentation for **all the requests** listed on the CIP must be reviewed and accepted by CHFA ACSDepartment prior to granting approval.

## D. Classification B.2 & Classification C

Please note if the Capital Improvement Projects (CIP) includes a request that falls under Classification B.2 or Classification C, approval from CHFA ACS is required. Completed ACS Checklist Form and ACS Review Form must accompany such CIP requests.

1. The Owner submits CHFA Form HM 6-21TS along with Existing Conditions Photographs, Drawings, Project Manual/Specifications, Structural Assessment, Comprehensive Capital

Needs Assessment (CNA) Schedule, Environmental Reports/Testing, and other support documentation as may be required by the scope and complexity of the proposed CIP. The Owner's building design professional must sign the certification statement indicating that the proposed scope of work has been/will be planned, designed and completed in accordance with current building codes, Local, State and Federal regulations and the current Standards.

2. Upon determination that the submission is **complete**, the CHFA Asset Manager forwards the submission along with Completed ACS Checklist Form and ACS Review Form HM 6-21TS to the CHFA ACS Department for review and approval. CHFA ACS staff may then correspond directly with the building design professionals (with a cc: to the CHFA Asset Manager & Owner), to address specific ACS questions or concerns, and request additional information. For all other questions concerning the submission, CHFA Asset Manager would be the lead. CHFA ACS staff will notify CHFA Asset Manager once bid solicitation documents are acceptable and ready for procurement.
3. Upon notification from the CHFA Asset Manager that the bid solicitation documentation is acceptable, the Owner and building design professional will obtain a minimum of three (3) bids in a competitive process, and submit the bids, the name of the Owner's recommended contractor, and CHFA Escrow Release Pre-Approval Form HM 6-21 for the CIP to the CHFA Asset Manager. The Owner's building design professional must sign the certification statement indicating that the proposed scope of work has been/will be planned, designed and completed in accordance with current building codes, Local, State and Federal regulations and the Standards. If the CIP falls under Replacement Reserve Descriptive Codes A-2, A-9 or A-10 per CHFA Form HM 6-22, the submission must also include a Capital Improvement Schedule for Extensive Replacement.
4. Upon notification from the CHFA Asset Manager of the acceptability of the bid proposal and authorization to proceed, the Owner submits executed contract, construction schedule and building permit approval (if required). The Owner and building design professional may then commence with the construction phase of the project.
5. Upon completion of the approved project, the Owner submits CHFA's Request to Release Escrow Funds Form HM 6-24, and any required back-up information, to CHFA's Asset Manager and Finance Department. The Owner's building design professional must sign the certification statement indicating that the proposed scope of work has been planned, designed and completed in accordance with current building codes, Local, State and Federal regulations and the Standards. Depending upon the scope and complexity of the CIP, final as-builts, environmental clearance, final inspection from the jurisdiction, lien waivers, progress and project completion photographs may be required. The CHFA Asset Manager forwards all the required back-up information along with Completed ACS Checklist Form to ACS for approval prior to release of final payment.

## Capital Improvement Guide

The following guide provides detailed information regarding required documents, the scope of work (if applicable), and questions/considerations. The review checklist was created to help Owners and property managers in understanding the questions and concerns typically raised by CHFA. The documentation that may be required by CHFA includes items such as bids, drawings, specifications, structural or CNA's and environmental reports or testing for the specified CIP.

The scope of work description describes the extent of the work to be performed for the repair or replacement project. The contractor's bids should match the Owner's scope of work description. The scope of work description is not required for all projects. In more complex projects, the project 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 normally be asked by a professional building design or construction professional when assessing the repair or replacement project. Please refer to the Standards for use in seeking additional information about specific requirements for each repair type. 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.

**I. Classification A -** minor repairs (owners/property managers generally coordinate this work)

The following is a list of repairs:

A. Air-Conditioning units in existing sleeves replacement
B. Appliance Replacement
C. Bathroom cabinet/countertop/ plumbing fixtures/controls/fittings replacement
D. Bathroom and kitchen exhaust fans replacement
E. Building and site termite treatment
F. Decking repair/replacement (< 24" above finished grade)
G. Door replacement (Storm Door or Interior Door)
H. Electrical light fixtures and outlets repair/replacement
I. Exterior painting/caulking/weatherproofing
J. Flooring replacement
K. Gutter system replacement/installation
L. Kitchen cabinet/countertop/ plumbing fixtures/controls/fittings replacement
M. Masonry re-pointing, minor brick replacement and joint repair
N. Pool/tennis court/fitness center/playground repair/replacement
O. Power washing of exterior building elements
P. Security systems repair/replacement
Q. Tree/bush/shrub trimming or removal

The following questions/considerations are applicable for all Classification A projects:

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?

Please refer to the Standards and consider equipment and building methods which promote a healthy and safe home environment.

**A. Air-Conditioning units in existing sleeves replacement**

Questions/considerations:

a. Are there air leaks into the apartment?
b. What is the condition of the existing frame and trim? If wood, is it rotted or damaged?
c. Is there any indication of water infiltration into the surrounding wall cavity?
d. 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?

**B. Appliance replacement**

Questions/considerations:

a. Are ENERGY STAR appliances being installed?
b. Is the existing space provided adequate in size for the new appliance?

**C. Bathroom cabinet/countertop/ plumbing fixtures/controls/fittings replacement**

Questions/considerations:

a. Is HUD 'Severe Use' cabinetry required to be installed?
b. Will water-efficient fixtures be installed such as low-flow toilets and flow reducers for shower heads, bathtubs and lavatories?
c. 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.
d. Is the unit handicapped accessible? If so, are all of the appropriate grab bars installed per building code requirements? Does it have a 'roll-out' shower stall? If so, the new flooring and door threshold may need to meet local building code.

**D. Bathroom and kitchen exhaust fans replacement**

Questions/considerations:

a. 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 a necessity.
b. What is the condition of the current venting? Is it adequate?
c. Could there be installation of one dual control for both lighting and exhaust fan venting?

**E. Building and site termite treatment**

Questions/considerations:

a. Has termite damage occurred? If so, has the damage been addressed and corrected appropriately?

**F. Decking repair/replacement (< 24" above finished grade)**

Questions/considerations:

a. Please consider 'green' and recycled materials and building methods which promote a healthy and safe home environment.
b. Ensure the new deck and/or balcony including handrails and guardrails meets all current building and fire codes.
c. Is the new deck being repaired or replaced? What is the cause of the problem?
d. Ensure the new deck and/or balcony structure meets all applicable structural loading requirements, including live and dead loads, such as snow, wind, seismic and lateral loading.

**G. Door replacement**

1. Exterior storm door replacement

   Questions/considerations:

   a. 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?
   b. What is the condition of the existing door jamb? Are there cracks or areas where water infiltration is evident?
   c. What is the condition of the surrounding exterior wall, siding and sheathing?
   d. Has the existing exterior trim paint been tested for lead?
   e. Does the new storm door have a 'screen' option?

2. Interior door replacement

   Questions/considerations:

   a. Is the new door going in an existing door frame? If your door frame is damaged, you need a pre-hung door, which includes the frame and door.

**H. Electrical light fixtures and outlets repair/replacement**

Questions/considerations:

a. 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?
b. If the outlets are located in bathrooms or kitchens near water sources, the outlets need to be GFI. All existing GFI's shall be tested and confirmed to be in good working condition.
c. Energy-efficient bulbs should be used in all fixtures.
d. Does the condition of the existing electrical wiring, boxes and switches support the new fixtures to be installed?
e. Is an upgrade of the panel box from 60 to 100 amps needed? Does the panel have outdated fuses?

**I. Exterior painting/caulking/weatherproofing**

Questions/considerations:

a. 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?
b. Has the existing exterior paint been tested for lead?
c. Has the existing caulking been tested for PCB's or asbestos?
d. 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.

e. If wood trim is being replaced, what is the condition of the flashing? Also, in lieu of wood trim, consider using PVC.

**J. Flooring replacement**

1. Bathroom / Kitchen Flooring replacement
   Questions/considerations:
   a. What is the material of the bathroom/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.
   b. If the new flooring will be installed over existing, is the existing flooring in good condition, or is there cracking and buckling?
   c. What is the condition of the 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 a necessity.
   d. Is mold visible or suspected?
   e. What is the condition of the gypsum wall and ceiling board?
   f. Does the floor have a floor drain? Is the existing pitch adequate for drainage?
   g. 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.
   h. Is the unit handicapped accessible? If so, are all of the appropriate grab bars installed per building code requirements? Does it have a 'roll-out' shower stall? If so, the new flooring and door threshold may need to meet local building code.
   i. Will flooring be installed so as not to void the manufacturer's warranty?

2. Carpet Replacement
   Questions/considerations:
   a. For maintaining indoor air quality, hard floors are preferred over carpeting in dwelling units.
   b. If hardwood flooring is found to exist under carpeting, and if it is salvageable, consider refinishing the existing hardwood floor for greater aesthetics and health benefits to the residents.
   c. What is the condition of the sub-floor? Does the sub-floor need to be replaced or repaired, and to what extent?
   d. When installing the carpeting and pad, will they be installed to 'lay flat' under all heating elements, rather than 'rolling up' underneath the elements?

**K. Gutter system replacement/installation**

Questions/considerations:
a. What is the condition of the existing roof? Is it due to be replaced?
b. What is the condition of the fascia and flashing?
c. If the gutters are being replaced, is the new gutter and downspout sizes and locations adequate for the anticipated rainwater?
d. Will the downspouts end with a splash block and/or extenders?
e. Is the existing grade at the building graded away from the building foundation?
f. Is a water-reclamation method possible to recycle rainwater for other uses within the building or for irrigation?

**L. Kitchen cabinet/countertop/ plumbing fixtures/controls/fittings replacement**

Questions/considerations:
a. Is HUD 'Severe Use' cabinetry is required to be installed.

b. In units designed as barrier-free and also for the elderly, cabinetry shall meet accessibility building codes for design and clearances. Are lever handles being installed?
c. 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.
d. Are water-efficient measures such as flow reducers for sinks being considered?
e. Spray hoses are not recommended due to the possibility of leaks.

**M. Masonry re-pointing, minor brick replacement and joint repair**

Questions/considerations:

a. 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.
b. Are the weep holes clogged? Are weep holes even installed in the brick coursing?
c. 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.
d. What is the condition of the flashing?
e. What is the condition of the lintels? Are the lintels rusted? Is mortar missing from the joint at the lintel?

**N. Pool/tennis court/fitness center/playground repair/replacement**

Questions/considerations:

a. 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.
b. Is ponding and/or site drainage an issue?
c. Is the existing pool leaking? Does the pool have a fence around it which meets code for safety? 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.
d. 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 building code requirements? Sand is not an appropriate surface. Many recycled materials are available which meet building code requirements and also provide a good and safe surface under play equipment.
e. Does the fitness equipment have the appropriate safety devices installed?
f. Is the existing electrical service adequate for the new equipment and usage?

**O. Power washing of exterior building elements**

Questions/considerations:

a. 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?
b. What is the condition of the flashing? Have leaks been reported at doors and windows, and flashings?
c. If power washing vinyl siding, follow instructions and spray at a perpendicular and downward angle to the siding to avoid water infiltration under the siding.

**P. Security systems repair/replacement**

Questions/considerations:

a. What is the testing schedule?
b. If cameras are used, verify that there are no 'blind spots'.
c. What is the procedure for fob security, if a key fob is lost?

d. Verify that the new equipment can be accommodated by the existing electrical service.

**Q. Tree/bush/shrub trimming or removal**

Questions/considerations:

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

## II. Classification B - minimal rehabilitation (may require an architect/engineer)

The following is a list of rehabilitation items and recommended professionals to be engaged in the process as previously defined:

A. Air-conditioning units in existing/new sleeves replacement/installation (I/C)
B. Air-conditioning equipment and systems (roof-top) repair/replacement/installation (PE)
C. Asphalt roof shingle repair/replacement / installation (I/C)
D. Bathroom and kitchen exhaust fans/systems installation (I/C)
E. Built-up roofing repair/replacement/installation (A/PE/I)
F. Electrical service repair/replacement (I)
G. Exterior door replacement/installation (I/C)
H. Exterior siding repair/replacement/installation (I/C)
I. Hard-wired smoke detector system/carbon monoxide detector system installation (PE)
J. Heating equipment/controls repair/replacement/installation (PE)
K. Hot water heaters/controls replacement/installation (I/C)
L. Single-ply roofing repair/replacement/installation (A/PE)
M. Site paving repair/replacement/installation, including parking areas and sidewalks (I/PE)
N. Window replacement/installation (I/C)

The following questions/considerations are applicable for all Classification B projects and require three (3) bids:

1. Possible required documents for CHFA's ACS review:
   a. Drawings – plans, elevations and/or details
   b. Project Manual/Specifications
   c. Structural Assessment
   d. Capital Needs Assessment
   e. Environmental Reports/Testing

Please refer to the Standards and consider equipment and building methods which promote a healthy and safe home environment.

**A. Air-Conditioning units in existing/new sleeves replacement/installation**

Questions/considerations:

a. What is the condition of the existing sleeve and the sleeve flashing? Are there leaks apparent? Is replacement of the sleeve needed?
b. Is there an insulated sleeve/unit cover for winter months?
c. Are there air leaks into the apartment?

d. What is the condition of the existing frame and trim? If wood, is it rotted or damaged?
e. Is there any indication of water infiltration into the surrounding wall cavity?
f. 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?

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

Questions/considerations:

a. What is the condition of the roof? Roof drains? Roof penetrations?
b. If the roof has a parapet wall, what is the condition of the parapet?
c. What is the condition of the roof flashing?
d. If the dunnage or curbs exist, what is the condition? Are repairs needed?
e. Is the roof structure able to support the new loads of the equipment?
f. Is the existing electrical service adequate to support the new equipment?
g. What is the condition of the ductwork and plumbing connections?

**C. Asphalt roof shingle repair/replacement/installation**

Questions/considerations:

a. 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.?
b. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, etc.?
c. What is the age of the existing roof?
d. How many layers of asphalt shingles are presently installed on the roof?
e. May hazardous materials be present?
f. What is the condition of the roof insulation, fascia and/or soffit?
g. Is the existing roof/attic ventilation adequate? Are there attic louvers, ridge venting and soffit venting? What is the condition of these elements?
h. Are there skylights? What is the condition of the skylights?
i. Is there any evidence of water infiltration at the roof penetrations?
j. What is the condition of the gutters and leaders? Are they sized adequately for the storm water runoff?
k. What is the condition of the flashing at the roof and the flashing at the chimney?
l. What is the condition of the chimney?

**D. Bathroom and kitchen exhaust fan system installation**

Questions/considerations:

a. 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.
b. What is the condition of the current venting? Is it adequate?
c. The Standards promote the installation of one dual control for both lighting and exhaust fan venting.

**E. Built-up roofing repair, replacement and installation**

Questions/considerations:

a. 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.?
b. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, metal decking, concrete, etc.?
c. What is the age of the existing roof?
d. May hazardous materials be present?

e. What is the condition of the roof insulation, fascia and/or soffit or parapet?
f. What is the R value of the existing insulation and is it adequate and to code?
g. Is the existing roof ventilation adequate? Are there roof vents and soffit venting? What are the condition of these elements?
h. Are there skylights? What is the condition of the skylights?
i. Is there any evidence of water infiltration at the roof penetrations?
j. 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?
k. Are secondary roof drains present such as scuppers?
l. What is the condition of the flashing at the roof and the flashing at the chimney?
m. What is the condition of the chimney?
n. What is the condition of any roof-top curbs or dunnage?

**F. Electrical service repair, replacement and installation**

Questions/considerations:

a. What is the condition of the existing electrical wiring, conduit, boxes and switches?
b. 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.
c. Does the cable and/or telephone systems need to be updated as well?
d. Are GFI outlets installed?

**G. Exterior door replacement and installation**

Questions/considerations:

a. 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?
b. What is the condition of the existing door jamb? Are there cracks or areas where water infiltration is evident?
c. What is the condition of the surrounding exterior wall, siding and sheathing?
d. Has the existing exterior trim paint been tested for lead?

**H. Exterior siding repair, replacement and installation**

Questions/considerations:

a. 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?
b. What is the age of the siding? Is the existing siding asbestos?
c. What is the general condition of the doors and windows and the flashing at each?
d. Why is the existing siding being repaired or replaced? Is there damage to the exterior wall cavities?
e. Has the existing exterior paint been tested for lead?
f. Has the existing caulking been tested for asbestos or PCB's?
g. 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.
h. If wood trim is being replaced, what is the condition of the flashing? Also, in lieu of wood trim, consider using PVC.

**I. Hard-wired smoke detector system/carbon monoxide detector system installation**

Questions/considerations:

a. Is the existing wiring and equipment capable of supporting the new system?

**J. Heating equipment/controls repair, replacement and installation**

Questions/considerations:

a. What is the energy-efficiency of the new system being proposed?
b. Has the chimney been inspected for leaks?
c. Is there adequate draft?
d. Are the existing controls up-to-date and programmable? Or should they be replaced?

**K. Hot water heaters/controls replacement and installation**

Questions/considerations:

a. What is the energy-efficiency of the new hot water system being proposed?

**L. Single-ply roofing repair, replacement and installation**

Questions/considerations:

a. 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.?
b. What is the condition of the roof sub-structure – plywood sheathing, wood rafters or trusses, metal decking, concrete deck, etc.?
c. What is the age of the existing roof?
d. May hazardous materials be present?
e. What is the condition of the roof insulation, fascia and/or soffit or parapet?
f. What is the R value of the existing insulation and is it adequate and to code?
g. Is the existing roof ventilation adequate? Are there roof vents and soffit venting? What is the condition of these elements?
h. Are there skylights? What is the condition of the skylights?
i. Is there any evidence of water infiltration at the roof penetrations?
j. What is the condition of the roof drains? Are they sized adequately for the storm water runoff? Is the number of drains adequate? Are the roof drains maintained and cleaned regularly of debris?
k. Are secondary roof drains present such as scuppers?
l. What is the condition of the flashing at the roof and the flashing at the chimney?
m. What is the condition of the chimney?
n. What is the condition of any roof-top curbs or dunnage?

**M. Site paving repair, replacement and installation – including parking areas and sidewalks**

Questions/considerations:

a. What is the sub-soil condition? Has a soil report been developed for the site?
b. The existing site drainage must be evaluated for its condition and any possible deficiencies.
c. What is the traffic flow, parking layout and existing curbs condition?
d. What is the condition of the sidewalks?
e. Is the site handicapped accessible and barrier-free?

**N. Window replacement and installation**

Questions/considerations:

a. Are the new windows energy-efficient?
b. What is the condition of the window flashing?
c. 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.
d. 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.
e. What is the condition of the interior and exterior window trim? Will the trim be replaced?
f. Will the new window style be similar in appearance and aesthetics to that of the old windows?
g. 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?

**III. Classification C -** (capital improvements/large scale repairs generally require an architect/engineer)

The following is a list of capital improvements/large scale repairs and recommended professionals to be engaged in the process as previously defined:

A. Alterations to or removal of fire-rated enclosures/separations/passages/doors (A/PE)
B. Antenna; i.e. cell tower installation (PE)
C. Building or site structural repairs/replacement (PE)
D. Commercial space build-out (A)
E. Cooling plants for buildings (cooling towers, piping, ductwork, etc.) repair/replacement/installation (PE)
F. Decking/balcony repair/replacement (>24" above finished grade) (A/PE)
G. Electrical service upgrade (PE)
H. Electrical switchgear repair/replacement (PE)
I. Elevator repair/upgrade/replacement (AV/PE)
J. Emergency generator repair/replacement/installation (PE)
K. Energy-efficiency upgrades (building components/systems) (A/PE)
L. Exterior fire-escape repair/replacement (A/PE)
M. Exterior masonry repairs where movement cracks are apparent (PE)
N. Geothermal heating/cooling system installation (PE)
O. Heat/fire/smoke suppression systems (AV/PE)
P. Heating plants (includes boilers/furnaces and associated piping/ductwork and chimneys/flues) (PE)
Q. Parking structure repair/modification (A/PE)
R. Photovoltaic/solar thermal system installation (PE)
S. Site grading and retaining wall repair/replacement/installation (PE)
T. Site utility (storm/sanitary drainage system, and electric/gas/phone/cable line) work (PE)

The following questions/considerations are applicable for all Classification C projects and require three (3) bids:

1. Possible required documents for CHFA's ACS review:
   a. Drawings – plans, elevations and/or details
   b. Project Manual/Specifications
   c. Structural Assessment
   d. Capital Needs Assessment
   e. Environmental Reports/Testing

Please refer to the Standards and consider equipment and building methods which promote a healthy and safe home environment.

**A. Alterations to or removal of fire-rated enclosures/separations/passages/doors**
Questions/considerations:
   a. What permits are required for this installation? What are the building code requirements?
   b. Does the project need to be reviewed and approved by the building department, fire marshal's office, etc.?

**B. Antenna; i.e. cell tower installation**
Questions/considerations:
   a. What permits are required for this installation? What are the building code requirements?
   b. Does the project need to be reviewed and approved by planning and zoning for height restrictions, etc.?

c. What is the aesthetic impact of the installation on the building and neighborhood's appearance?
d. Will a structural assessment need to be completed due to the increased roof, wind and lateral loading on the structure?
e. What roof penetrations are required? All new roof penetrations shall be adequately flashed.
f. 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?
g. 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.

**C. Building or site structural repairs/replacement**

Questions/considerations:

a. What is the cause of the structural problem at the building or site?
b. Is water infiltration part of the on-going problem?
c. Is the problem related to heaving soil or soil settlement?
d. An evaluation by a PE is required to determine the underlying cause and recommended remedy to address the problem, and is to be submitted to CHFA for review and comment.
e. The final drawings shall be submitted to CHFA 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 CHFA for review.

**D. Commercial space build-out**

Questions/considerations:

a. What is the nature of the commercial space?
b. Will zoning review and approval be required due to a possible change in use?
c. Is the building zoned for commercial use?
d. Are systems upgrades needed to support the new commercial use?
e. Is the space accessible and barrier-free? If not, what are the site and building limitations?
f. What are the parking requirements for the new use? Is parking available?
g. Are there special equipment needs for the new commercial use? Such as a grease-trap, etc.?

**E. Cooling plants for buildings – includes cooling towers, piping and ductwork repair/replace/install**

Questions/considerations:

a. What is the type of cooling system proposed? Geothermal?
b. What is the efficiency rating of the proposed system?
c. What is the existing system being replaced?
d. 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.
e. What permits are required for this installation? What are the building code requirements?
f. Does the project need to be reviewed and approved by the local planning and zoning departments for height restrictions, etc.?
g. What is the aesthetic impact of the installation on the building and neighborhood's appearance?
h. A structural assessment will need to be completed due to the increased roof, wind and lateral loading on the structure.
i. What roof penetrations are required? All new roof penetrations shall be adequately flashed.
j. 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?

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

Questions/considerations:

a. Does the new deck and/or balcony including handrails and guardrails meet all current building and fire codes?
b. Why is the new deck being repaired or replaced? What is the cause of the problem?
c. Does the new deck and/or balcony structure meet all applicable structural loading requirements, including live and dead loads, such as snow, wind, seismic and lateral loading?

**G. Electrical Service upgrade**

Questions/considerations:

a. 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.
b. What is the condition of the existing electrical wiring, conduit, boxes and switches?
c. Do the cable and/or telephone systems need to be updated as well?
d. Are GFI outlets installed at all 'wet' areas?

**H. Electrical Switchgear repair/replacement**

Questions/considerations:

a. Where is the electrical service located? Above 'green' or below ground? If below ground, all underground utility locations shall be determined and avoided - Call Before You Dig.
b. What is the compatibility of the existing system and new system?
c. What is the condition of the existing electrical wiring, conduit, boxes and switches?
d. Does the cable and/or telephone systems need to be updated as well?
e. Are GFI outlets installed?

**I. Elevator repair/upgrade/replacement**

Questions/considerations:

a. Is the new cab compatible with the existing system and shaft?
b. What are the ventilation requirements of the new elevator? Is air-conditioning of the elevator mechanical room required?
c. Is a pit drain existing and/or required?
d. What is the alternate source of power? Is an emergency generator required? Is it diesel powered?
e. Assure that the cab size and controls are handicapped accessible and meet current codes.
f. Where is the elevator mechanical room located? If the elevator mechanical room is located on the roof; what is the condition of the room? What is the exterior envelope and roof condition?

**J. Emergency generator repair/replacement/installation**

Questions/considerations:

a. Is the new generator properly sized for the existing and future load requirements and amperage?
b. What is fuel source of the generator? Is it diesel powered?
c. Are fuel tanks required? If so, where will they be located?
d. Where will the generator be located? What is the condition of the site where it will be located?
e. Does the generator include a weather proof, lockable enclosure? Are bollards needed if located near a drive aisle or parking area?
f. Are building code/NPFA requirements for clearances met?

**K. Energy-efficiency upgrades (building components/systems)**

Questions/considerations:

a. Has Eversource, UI and SCG for subsidies and technical support for energy-efficiency programs been contacted?
b. Has CT Green Bank been contacted for program and incentive information?
c. Is the existing system infrastructure compatible with the new system?

**L. Exterior fire-escape repair/replacement**

Questions/considerations:

a. Does the new fire-escape meet all current building and fire codes?
b. Are the windows leading to the fire escape also code compliant for egress sizing?

**M. Exterior masonry repairs (where movement cracks are apparent)**

Questions/considerations:

a. 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.
b. Are the weep holes clogged? Are weep holes even installed in the brick coursing?
c. 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.
d. What is the condition of the flashing?
e. What is the condition of the lintels? Are the lintels rusted? Is mortar missing from the joint at the lintel?

**N. Geothermal heating/cooling system installation**

Questions/considerations:

a. Has Eversource, UI and SCG for subsidies and technical support for energy-efficiency programs been contacted?
b. Has CT Green Bank been contacted for program and incentive information?
c. Is the existing system infrastructure compatible with the new system?
d. Has soil testing been done for possible soil contamination?

**O. Heat/fire/smoke suppression systems**

Questions/considerations:

a. Is the existing wiring and equipment capable of supporting the new system?

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

Questions/considerations:

a. What is the energy-efficiency of the new system being proposed?
b. Has the chimney been inspected for leaks?
c. Is there adequate draft?
d. Are the existing controls up-to-date and programmable? Or should they be replaced?

**Q. Parking structure repair/modification**

Questions/considerations:

a. What is the cause of the structural problem at the parking structure?
b. Is water infiltration part of the on-going problem?
c. An evaluation by a PE is required to determine the underlying cause and recommended remedy to address the problem, and is to be submitted to CHFA for review and comment.
d. The final drawings shall be submitted to CHFA for review and comment.
e. Is the scope of work to be insured?

f. All existing reports, logs, and on-going condition histories shall be investigated and submitted to CHFA for review.

**R. Photo-voltaic/solar thermal system installation**

Questions/considerations:

a. Has Eversource, UI and/or SCG been contacted for subsidies and technical support for energy-efficiency programs?
b. Has CT Green Bank been contacted for program and incentive information?
c. Is the existing system infrastructure compatible with the new system? If not, what additional systems or upgrades will be needed? What is the cost for these upgrades, etc?
d. Where will the new system be located? On the roof or at grade on the site?
e. If located on the roof, what is the age of the roof? Is asbestos present in the roof or flashing and will it require abatement? 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?
f. Is the roof structure adequate to support the new solar panels? If not, what structural upgrades will be needed and how much will it cost? A structural assessment may need to be completed due to the roof's existing weight capacity, wind and lateral loading on the roof structure.
g. 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.
h. Are wetlands present on the site or any other site concern? Has a Phase I ESA been completed to understand any possible soil or site contamination?
i. What permits are required for this installation? What are the building code or fire code requirements if any? Has the town/city been notified and have they reviewed the proposed system and have they provided comments?
j. Does the project need to be reviewed and approved by planning and zoning for height restrictions, etc.?
k. What is the aesthetic impact of the installation on the building and neighborhood's appearance?
l. Has the State Historic Preservation Office (SHPO) been contacted regarding possible impacts?
m. What roof penetrations are required? All new roof penetrations shall be adequately flashed.
n. If there is a problem with the roof after install, who will be responsible? If there are roof leaks, who is responsible to review, inspect and pay for any damage?

**S. Site grading and retaining wall repair/replacement/installation**

Questions/considerations:

a. What is the cause of the structural problem at the retaining wall?
b. Is site drainage a problem?
c. Is water infiltration part of the on-going problem?
d. An evaluation by a PE is required to determine the underlying cause and recommended remedy to address the problem, and is to be submitted to CHFA for review and comment.
e. The final drawings shall be submitted to CHFA 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 CHFA for review.

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

Questions/considerations:

a. 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.

b. What is the compatibility of the existing system and new system?
c. What is the condition of the existing electrical wiring, conduit, boxes and switches?
d. Do the cable and/or telephone systems need to be updated as well?

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CHFA requires that all building materials, components, fabrications, and equipment for all proposed repair, replacement and capital improvement work be completed in accordance with all applicable building codes, State and Federal regulations and should strive to comply with the Standards. When determining the scope of work for proposed capital improvement, repair and replacement projects, consideration of the interconnection of the individual materials, components, fabrications, and equipment that comprise a fully-functioning building is strongly encouraged.

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/Owner request a design modification if needed and will be reviewed on a case-by-case basis.

The Standards are not intended to reduce or circumvent the requirements of current applicable building codes, and/or Federal, State and Local law. It is the responsibility of Owners/property managers, and their professional consultants (as required) to assure compliance of the design and construction with all required laws, codes and the Standards.