



HUD Innovation in Affordable Housing

student design & planning competition
2017



Planning and Design Criteria

Innovation has three basic definitions: a new idea, the act or process of introducing new ideas, and the process of translating an idea or invention into a good or service that increases value. In application, the starting point for innovative design is deconstructing the design program and the owner's objectives for the project. What are we attempting to accomplish? What are the performance attributes we wish to improve? How can we improve durability, reduce energy consumption, improve resource utilization, improve indoor environmental quality, reduce environmental impact, increase community integration, increase density, improve resident quality of life, all while reducing first-cost? By analyzing and deconstructing the problem statement, and by asking the insightful questions, we place ourselves in a position to uncover, develop, and deploy innovative solutions. It is this journey that constitutes innovative design and the road competitors should travel.

The competition specifically asks teams to identify and develop innovative ideas and solutions for affordable family housing. Innovation should be highlighted in all aspects outlined below, while balancing affordability with resource efficiency, durability, and resiliency. The dwellings should be designed for accessibility and healthy living with natural daylight and indoor environmental quality, as well as defined outdoor community and family recreational spaces. The integration of advanced technologies is encouraged along with renewable and renewable-ready design.

While teams should emphasize innovation in all aspects of their solutions, the following criteria should be investigated:

Environmental

- **Durable:** Long lasting/low maintenance requirements.
- **Healthy:** Design for occupant health, safety, and psychological well-being.
- **Energy and Water Efficient:** Design for low-energy and low-water use requirements.
- **Resource Efficient:** Efficient use of materials; rapidly renewable materials; recycled content/recyclable.
- **Low-impact:** Design that either enhances or does not significantly diminish environmental quality.
- **Resilient:** Design and construction of buildings that resist natural and man-made hazards and provide for the protection of life, safety, and security of all residents.
- **Life Cycle Assessment:** Technique to assess environmental impacts of a product over all stages of its life.

Financial

- **Funding:** Primary sources contributing to financial pro forma; understanding rules, regulations, and guidelines.
- **Leveraging:** Secondary sources making use of or combining various financial instruments, such as tax credits, to increase the potential return of an investment.

- **Cash Flow:** Explore all potential funding sources and create alternative or innovative financing plans.
- **Affordable:** Cost effective to construct and operate over the long term.
- **Initial Capital Cost:** Fixed, one-time expenses associated with development.
- **Operations and Maintenance:** Day-to-day activities required to ensure that the building, systems, and equipment perform as intended.
- **Design for Replacement:** Ease of replacing systems, equipment, or building components as they wear or fail.
- **Infrastructure Longevity:** Design to remain serviceable well beyond financing term.

Social

- **Neighborhood:** Allowing for and encouraging social interaction among residents of a distinct community and within the wider surrounding community.
- **Access to Employment and Services:** Provide or make use of existing transportation networks to link the site with commercial centers.
- **Accessible:** Readily usable by individuals with varying degrees of physical ability.
- **Sense of Community:** Emotional connections wherein residents care about the community, value their relationships to community and its members, and are invested in the future of the community.
- **Social Networking:** The ability to connect with people and places, including access to amenities, health care, and supportive services, contributes to overall well-being, helps to lower the risk of isolation, and enhances independence.
- **Sense of Place:** Creating an imageable perception of a unique or special place.
- **Sense of Control and Comfort:** Engendering individual ownership of place to promote physical and emotional well-being.

Program:

Woodhill Homes is an existing 478-unit multi-family property located on a 31 acre site bounded by Woodhill Road, Mt. Carmel Road, East 110 Street, and Woodland Road, in Cleveland, Ohio. The existing apartment buildings were constructed in 1940 with the last major rehab in 1995. The property consists of sixty residential buildings housing a total of 134 one-bedroom units; 254 two bedroom units; 85 three bedroom units; 4 five-bedroom units; and 1 six-bedroom unit. [see Plan Set: Residential and MEP Documents on [Competition Information](#) page]. In addition, there is a detached community center, which serves various resident programs and activities, and two service buildings. On-site amenities include vehicular parking and a large community park. The property is located in an MF-C1 Multi-Family Residential Zone within the City of Cleveland [see Site Plan and Zoning Map on [Competition Information](#) page].

Although functional, the buildings are approaching obsolescence and are in need of significant upgrade or replacement. The operational and energy costs are very high due to lack of insulation and outdated glazing systems. Mechanical systems date primarily to the 1995 rehabilitation and, as such, are nearing the end of anticipated useful life. The property owner, the Cuyahoga Metropolitan Housing Authority (CMHA), is seeking innovative redevelopment plans for this family housing property. CMHA envisions an exemplary project, which demonstrates sustainability, efficiency, durability, and resiliency to the highest order, while simultaneously meeting the physical and social needs of the residents. To promote innovation and encourage the exploration of unique solutions, the competitors will be provided with flexibility in proposing options and developing design solutions. CMHA has stressed that they wish to see innovative solutions applied to economy of construction.

Woodhill Homes is a large-scale development subdivided into five individual “Villages” which are identified as Village A through Village E. CMHA intends to phase the redevelopment project and use one village as a prototypical redevelopment starting point, with the concepts and

designs created for that initial phase used to inform the remaining redevelopment going forward, thus establishing a master plan for the future on-going redevelopment. Further, CMHA has directed that the existing buildings, even though near obsolete in terms of interior finishes and operational performance, are substantially constructed and should be rehabilitated and re-used. To increase overall site density CHMA desires that a significant amount of new infill housing also be created. The amount of infill housing provided and the configuration of that housing and its relationship to the existing buildings will be left up to the designers. Demolition and removal of some or portions of the existing buildings will also be considered if the overall benefit is commensurate with the cost involved. The new dwellings should be a mix of 2 and 3 bedroom dwellings in a ratio of approximately 2 to 1 respectively.

Village C has been selected as the initial site for the planned redevelopment. Concepts and designs arrived at by the competitors shall form the basis for the redevelopment of the four subsequent villages going forward so must be translatable to those sites. Further CMHA desires that the Village C redevelopment demonstrate improved connectivity to the surrounding urban grid both physically and visually.

For any approach selected, the functional requirements will remain the same, and include: exceptional energy efficiency, low maintenance, prioritized indoor environmental quality, abundant natural light, spatial flexibility and personalization opportunities, and economy of construction, with additional emphasis on the planning and design criteria listed above. The teams will also assume the following process and logistical steps to be incorporated into their respective solutions:

- Temporary relocation of tenants and tenant logistics will be managed by the CMHA.
- Environmental concerns, such as lead paint and asbestos removal, will be handled by a separate environmental mitigation team.

The property is currently owned and operated by the CMHA, however alternate ownership/management arrangements such as a Rental Assistance Demonstration Program (RAD) conversion may be explored and proposed by the competitions teams.

Dwellings:

The minimum area requirement for each dwelling based on bedroom count is governed by a number of different governmental agencies. For the purposes of this competition, the minimum dwelling area requirements for new dwellings shall be:

- 2 bedroom – 750 square feet
- 3 bedroom – 1,000 square feet

Existing rehabbed dwellings may be smaller than these minimums, but no smaller than they are presently. Each of the provided units are to be self-contained family dwellings including bedrooms, kitchen and dining spaces, living areas, bathrooms, laundry, and appropriate storage spaces. Bedrooms shall be large enough to accommodate two persons each and living areas shall be adequately sized to accommodate families based on two persons per bedroom. In addition, a minimum amount of private use exterior living space must be provided for each dwelling. The use of “front-porches” and similar amenities, which provide for passive-surveillance opportunities as well as encourage neighborhood interaction, are highly encouraged.

Each new and rehabilitated dwelling should exhibit exceptional environmental performance including energy and water use, indoor environmental quality, durability, and resiliency. Although the target level of performance is high, the budgetary constraints are real and designs must be defensible.

Site Development:

Site: Village C is approximately 3.5 acres as shown on site plans [see Site Plans on [Competition Information](#) page]. The existing building configurations and site layout creates outdoor spaces with little emphasis or spatial hierarchy. In addition to increasing density through the introduction of additional dwellings, the design teams should strive to create exterior spaces and areas recognizable as distinct activity settings conducive to informal gatherings and socialization and other desirable social interactions. Resident pedestrian pathways through the site should be well defined, functional and pleasant to use with socialization opportunities, and formal and casual connectivity to the outdoor activity settings. Pedestrian paths in particular should be hierarchal from public to private.

Vehicular access ways should integrate into the designs and should be as functional and compact as practical. Where pedestrian and vehicular access intersects, pedestrian paths should be visually dominant.

Public transportation opportunities exist in relative short distances to the site including train stops for two rail lines and adjacent bus stops [see transit maps on [Competition Information](#) page]. The immediate area also has multiple major employers including Cleveland Clinic Children’s Hospital and Case Western Reserve University. The proximity of the site to these and other employment and service opportunities as well as the existing transit options create a unique opportunity to create a transit oriented development – something the CMHA encourages. As such, on-site parking should be provided at a ratio of one parking space per dwelling.

Site Amenities:

Family-centric amenities, such as play areas for small children, community gardens, and common seating areas, are desired. Basketball courts, skateboard areas, and the like are not to be included as they tend to attract non-residents onto the site from the surrounding area.

To improve on-site security, the perimeter of the property should be visually distinct from, but integrated into, the surrounding neighborhood. The property should be aesthetically appealing with defensible space but without perimeter fencing. Boundary defining systems, such as walls and landscaping, need not create hard security barriers but should require that access points onto and through the site are controlled to specific points and locations, and that those access points are easily viewed from the residences within the site. These types of passive security features should be included throughout the property. Similarly, where private-use outdoor spaces exist (i.e., intended to serve one specific dwelling), landscape features should be included to delineate those spaces as not for public use.

CMHA has indicated that the present trash enclosure area is too small to serve the population of the property, and that a larger, more functional design would be beneficial for managing the trash and recycling generated by the tenants.

Critical Considerations:

Successful projects will address the program, solve for the design criteria, and will respond to the following questions:

- What aspects of your design innovatively address the needs of low -income families?
- How does your solution respond to the site, zoning, and building code requirements or restrictions?
- How does your proposed design interact with the site?
- What innovative approaches did you employ in developing your design relative to the restrictions or opportunities presented by the site?
- What innovative energy efficiency, water conservation, and renewable energy strategies did you incorporate into your design?

- What innovative approaches did you employ in order to integrate your design into the neighborhood and community?
- How are themes of transit oriented development emphasized?
- What services and activity settings are planned and provided for to improve the quality of life for the population served?
- How are you planning to finance the project?
- What innovative financing solutions did you explore for leveraging and partnerships?
- Explain how your design and financial solutions innovatively integrate best practices and technology into your solution.

Accessibility Regulations:

Federal:

Fair Housing Amendments Act (FHA)

- In newly constructed non elevator buildings containing at least 4 dwelling units, all ground floor units must comply with the FHA’s seven design and construction requirements.
 - Req 1: Accessible building entrance on an accessible route
 - Req 2: Accessible public and common-use areas
 - Req 3: Usable doors
 - Req 4: Accessible route into and through the unit
 - Req 5: Controls in accessible locations
 - Req 6: Reinforced walls for the later installation of grab bars
 - Req 7: Usable kitchens and bathrooms
- There are 10 HUD-approved ‘safe harbors’ for FHA compliance. They can be found here: <http://www.fairhousingfirst.org/faq/safeharbors.html>

Section 504 of the Rehab Act of 1973 (Section 504)

- Section 504 requires access to programs which receive HUD funding. When a newly constructed HUD-funded housing development contains at least 5 units, the ‘the project’ is subject to Section 504. Housing developed by a Housing Authority is subject to Section 504. Among other requirements of the Section 504 regulations; no less than 5% of the total number of dwelling units in ‘the project’ must comply with the accessible design and construction requirements of the Uniform Federal Accessibility Standards (UFAS); these must be disbursed throughout the site and among the various unit types available. An additional 2% of the total number of dwelling units in ‘the project’ must accommodate the needs of people with hearing and visual disabilities. The Section 504 regulations can be found here: http://portal.hud.gov/hudportal/HUD?src=/program_offices/fair_housing_equal_opp/disabilities/sect504faq; UFAS can be found here: <http://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-aba-standards/ufas>

Americans with Disabilities Act Title II (ADA)

- Title II of the ADA applies to activities of states and local governments. A housing authority is considered part of a local government. As a result, Title II applies to all housing developed by a housing authority. No less than 5% of the total number of dwelling units in ‘the project’ must comply with the accessible design and construction requirements of the 2010 ADA Standards for Accessible Design; these must be disbursed throughout the site and among the various unit types available. An additional 2% of the total number of dwelling units in ‘the project’ must accommodate the needs of people with hearing and visual disabilities. The 2010 ADA Standards can be found here: http://www.ada.gov/2010ADAstandards_index.htm

State:

[TBD]

Applicable HUD Programs:

The Rental Assistance Demonstration (RAD)

- The Housing Authority plans to use HUD's RAD program to help finance the rehabilitation or redevelopment of the property.
- RAD allows proven financing tools to be applied to at-risk public and assisted housing and has two components:
 - 1st Component - Allows Public Housing and Moderate Rehabilitation (Mod Rehab) properties to convert, under a competition limited to 60,000 units, to long-term Section 8 rental assistance contracts; and
 - 2nd Component - Allows Rent Supplement (Rent Supp), Rental Assistance Payment (RAP), and Mod Rehab properties to convert tenant-based vouchers issued upon contract expiration or termination to project-based assistance.
- RAD is a central part of the Department's rental housing preservation strategy, which works to preserve the nation's stock of deeply affordable rental housing, promote efficiency within and among HUD programs, and build strong, stable communities.

Family Self-Sufficiency (FSS) Program

- FSS is a HUD program that enables families assisted through the Housing Choice Voucher (HCV) program and Public Housing (PH) residents...to increase their earned income and reduce their dependency on welfare assistance and rental subsidies.
- Public Housing Agencies (PHAs) work in collaboration with a Program Coordinating Committee (PCC) to secure commitments of public and private resources for the operation of the FSS program, to develop the PHA's FSS Action Plan, and to implement the program.
- FSS was established in 1990 by section 554 of the National Affordable Housing Act, which amended Title I of the U.S. Housing Act of 1937 by adding Section 23 for the FSS program. It is a successor program to project self-sufficiency and operation bootstrap. It was modified by the Quality Housing and Work Responsibility Act (QHRWA) of 1998.
- FSS regulations are found at 24 CFR Part 984.

Housing Choice Voucher Program Section 8

- The housing choice voucher program is the federal government's major program for assisting very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market. Since housing assistance is provided on behalf of the family or individual, participants are able to find their own housing, including single-family homes, townhouses and apartments.
- The participant is free to choose any housing that meets the requirements of the program and is not limited to units located in subsidized housing projects.
- Housing choice vouchers are administered locally by public housing agencies (PHAs). The PHAs receive federal funds from the U.S. Department of Housing and Urban Development (HUD) to administer the voucher program.
- A family that is issued a housing voucher is responsible for finding a suitable housing unit of the family's choice where the owner agrees to rent under the program. This unit

may include the family's present residence. Rental units must meet minimum standards of health and safety, as determined by the PHA.

- A housing subsidy is paid to the landlord directly by the PHA on behalf of the participating family. The family then pays the difference between the actual rent charged by the landlord and the amount subsidized by the program. Under certain circumstances, if authorized by the PHA, a family may use its voucher to purchase a modest home.

Other Applicable Federal Programs:

LIHTC

- The Low Income Housing Tax Credit (LIHTC) program uses tax policy to help develop affordable rental housing for low and very low-income families. Originally part of the Tax Reform Act of 1986, the LIHTC program leverages private capital and investor equity to support the development of new and rehabilitated affordable rental housing.
- In general, state governments can adapt the LIHTC program to meet their housing needs under broad federal guidelines.
- The private sector carries all development and marketing risk and enforces strong oversight and accountability. Investors only get to claim and keep the tax credits if their units are built, leased and maintained as affordable housing throughout a 15-year compliance period.
- Many states enforce a 15 year extended-use period to require that properties stay affordable beyond the first 15 years.
- States use a competitive process to award developers with credits.