CANADA MORTGAGE AND HOUSING CORPORATION

BUILDING/SITE SELECTION AND DESIGN

The location, dimensions and condition of the site, as well as the design of the building and individual units, will have a significant impact on the costs of construction and operation. These factors also can influence livability and marketability, ultimately determining the viability of your project.

Once you have determined the need and demand for affordable housing in your community, you will have in hand the information you need to identify the best location and design to meet the need. You will know the characteristics of the population to be served and the types of programs and services you plan to offer. These factors will drive the evaluation of potential properties and the development of the design program. This fact sheet outlines what you can expect to consider as you make these decisions, which will affect the long-term operations of your affordable housing project.

Background: Selecting a Site

The selection of a site for affordable housing should reflect the particular needs of the population that your housing development will serve. An important consideration is the location of the property in relation to the services residents will need to access, such as shopping, medical, schools and transportation. A steep piece of property is generally not suitable for elderly or physically disabled residents. Location of the site may also have a significant impact on the cost of your project. You will have to strike a balance between meeting the needs of your residents and the final location of your project

The shape, slope and soil conditions of a piece of property will all have an impact on the practicality of development. An odd-shaped lot may present design challenges and the cost to remediate a polluted site will have a serious impact on project viability. The availability of services to a site is another important consideration, as it is expensive to bring or upgrade water, sewer, power and other utilities, as well as roads and sidewalks, to a piece of property.

Selecting a Building

You may also consider acquiring a building, whether in use as residential, or to be converted from commercial or industrial. With the high cost of construction, it can be more affordable to purchase and renovate rather than design and build "from scratch." Consider tenant needs when evaluating an existing residential building, including mobility issues, size and type of units, amenity areas and proximity to services. Be sure to conduct a thorough technical analysis of structure, building materials, plumbing and electrical to find out the extent of renovations that will be needed. When assessing a non-residential building, you need to take into account the previous use, including building and room layout, potential environmental hazards and modernization of utilities that may be required to convert to the new use.

Selecting an appropriate site or building and developing the design will be strongly influenced by the land-use restrictions of the municipality. In some provinces and territories, cities and towns will have an official plan that defines the local government's vision for the land within

its boundaries. Zoning bylaws will provide guidelines for a particular area, neighbourhood, or in some cases, a specific property with respect to building design, including the maximum amount of floor area any building will be permitted to occupy, as well as maximum height and minimum distance from property lines. Sometimes a piece of property can be rezoned to suit your development plans; however the process could add significantly to the time and cost involved. Some municipalities might actually encourage increased density, which would allow you to add units to an existing development or build additional buildings on the property.

Suggested Activities

- Involve potential residents in identifying particular housing and service needs.
- Refer to your need/demand analysis to make sure you look at sites that meet the need.
- Analyze potential site(s) diligently. The ideal site is level, regular, unpolluted, with a solid base upon which to build and will not result in a financial or scheduling burden.
- Check with the local planning department to learn what parts of the city or town will allow higher-density residential development.
- Determine the willingness of local council and staff to consider changes to zoning before acquiring property that is not zoned for your intended use.
- Check out the CMHC Local Planning Process and Approvals fact sheet.

Selecting Design Consultants*

**The method used to develop your project will dictate how a group deals with the design aspects of the project. In a "turnkey" scenario for example, the contractor/builder will be responsible for employing the design professionals required. Also, the amount of funding available to the group will dictate its ability to hire professionals, such as project managers or development consultants, to take on various coordination activities.*

The design consultants will include an architect, a variety of engineers and often a landscape architect. The architect will use the information you provide about your intended resident population and the programs and services you intend to provide, along with the restrictions and requirements of the municipality, to develop a design for the building. In most cases, the architect will be your "prime consultant" and will coordinate the work of the other design consultants like structural, electrical, and mechanical engineers and the landscape architect. You should consider that you will be working together with the architect for at least two years, so you want to ensure that he or she will be a good fit.

If you do not have a dedicated staff person for the development process, now is the time to consider engaging a development consultant, who will help you to manage the work of the design consultants. This is also a good time to identify a cost consultant to estimate the construction costs of the design as it is developed.

Suggested Activities

- Review potential architects' previous work, both plans and actual buildings, and talk to past clients to learn about past approaches and practices.
- Take an active role in selecting an architect who understands the type of housing you plan to develop.
- Refer to the Ontario Association of Architects website www.OAA.on.ca on "Selecting an Architect"

The Building Design Process: Key Areas for Consideration*

**The key areas listed below all have an impact on the overall cost of the project, including long-term implications as building components will require repair and replacement. Your group, in conjunction with your professional resources, will need to assess how these areas will affect costs today, as well as in the future. This assessment should be completed prior to finalizing contracts to have the project constructed.*

Affordability: The design of the building and individual units has a significant impact on the costs of construction and operation. The smaller a unit is, the more affordable it is to build and maintain. As well, the unit layout can influence affordability and livability. For example, combining spaces such as the living and dining areas, can reduce floor space requirements, and high ceilings, built-in furniture and compact appliances make small units more livable.

Neighbourhood Impact: The shape, height, rooflines, exterior finishes and setbacks from the street of nearby properties should be taken into account to make sure the visual impact of your building is not disturbing to your future neighbours.

Building Size and Shape: The overall scale and massing of a new building should try to match that of the surrounding neighbourhood. The form of the building should incorporate as much variety as possible and avoid large expanses of flat wall or roof.

Building Appearance: How a building looks is critical to its acceptance within a community and to the "pride of place" it creates among residents. Think about visual elements like the windows, roof shape, trim, materials and colour so that your building is generally compatible with the surrounding neighbourhood. Provide individual identities to the dwelling units and pay attention to front doors, as these convey strong messages about the quality of a development and its residents.

Building Layout: Think about making entries both welcoming and secure. Make sure common areas, including amenity spaces, stairs, elevators and hallways, are easily accessed by all residents. Design to help, rather than hinder, on-site security.

Unit Layout: Within each unit be sure to consider the design of every room based on its intended use and make sure that each room can be furnished in at least two distinctly different ways. Natural light and ventilation are critical factors in the health and well-being of residents. The relationships between rooms, the circulation within each unit, and the views from the windows should also be carefully analyzed. A broad mix of unit types will provide variety and flexibility. Materials and appliances should be chosen to maximize health and safety of residents, while also taking into account long life and ease of maintenance.

Resident Program: It's important to consider what activities future residents will be engaged in and what on-site services are planned or anticipated. In supportive housing or assisted living, think about how residents will access the building and their units. For family housing, you should plan for a children's play area that is designed considering access and surveillance.

Design for Operations: Consider efficiency and productivity of cleaning, housekeeping, cooking, dining, recreation, and support services. Make energy efficiency a priority in the design because the savings you will see in utility costs will pay for any added building costs. Plan for maximum life-spans of building components like roofs, safety systems, heating, ventilation and air conditioning, appliances and floor coverings–sometimes designing for operations means spending a bit more on capital costs to save on long-term operating costs.

Parking: Parking areas when properly designed can be fully functional, accessible and safe while not dominating the property or streetscape. Affordable housing development may require less parking; depending on the municipal requirements, it may be possible to reduce the amount of parking from what would be required for a market development.

Public Open Space: The areas in and around the building intended for shared use by all residents and their visitors should be as thoughtfully designed as any other "space" in a development. Consider ease of access for residents from their individual dwelling units. Make sure that there are boundaries that clearly indicate what is public and what is private space. Maximize the visibility of public spaces from units to provide surveillance, especially for play areas. Design for use at night as well as during the day by providing adequate lighting. Sensitively designed public open space can turn a good development into a great one, providing a lasting amenity for residents and neighbours alike.

Private Open Space: Individual outdoor areas where residents can enjoy sun and sky in relative privacy is essential to quality of life. Patios, porches, decks, balconies and yards should be of adequate size, with easy access from each dwelling unit. Wherever possible, provide fencing or landscaped borders for added privacy and to indicate clear boundaries. Well-designed balconies balance the need for light and view with safety considerations.

Landscaping: The thoughtful design of the grounds will complement and enhance the development and its neighbourhood. Think about the selection and location of plantings, and make sure they are appropriately suited to the demands of future residents. Paths and outdoor seating should match the abilities, interests and activities of the people who will be living in the building. Make sure to provide storage for equipment and materials.

Sustainability: There is a wide and growing range of technologies, strategies, products and techniques to reduce a building's environmental impact to an absolute minimum. Strive to choose building materials and practices that reduce negative impacts on respiratory ailments or allergies. The design stage is a good time to think about the ability to make future changes easily and with minimum expense, to meet the evolving needs of residents.

Suggested Activities

- Before the design process begins, examine the lifestyles, health, needs and expectations of the people who will be living in your development.
- Identify how the building will be operated and maintained to suit these needs and expectations, what services will be offered, how employees will carry out duties and tasks, and long-term energy costs.
- Analyze the neighbourhood surrounding the potential site. Identify existing neighbourhood character through the lenses of history, architecture, service provision and demographic profiles.
- Identify the relationship(s) between your proposed development layout and population and the existing neighbourhood characteristics.
- Review the effectiveness and safety of open or public places for healthy social interaction as well as private areas for recuperation.
- Identify whether it is possible to reduce the amount of parking required by the municipality.
- Identify risks and opportunities for the affordable provision of units, both at the beginning and end of the site selection and design processes.

Conclusion

There are many areas to consider when selecting a site and design for your affordable housing development—from the cost, location, condition and shape of a property to the layout of individual units and the selection of building materials/systems used in construction. These considerations will help keep you focused in meeting the affordability objectives of your project.

The aim of the site selection and design processes is to achieve a unique harmony between the building site, building design, people who will live in the building and the surrounding neighbourhood character and residents. Reflecting on these various "pieces" will assist in working together with your local planner to identify what key considerations will need to be addressed in your proposed development or conversion and if the existing zoning requirements will require any changes. With some additional background research, these reflections will also help you to select an architect who will work for your project.

Further Resources

CMHC Website: CMHC conducts or supports a wide range of research aimed at improving the quality of Canadian housing. Through the Building and Design section on the CMHC website you will find information related to highrise construction, operation, maintenance and repair as well as information related to Healthy Housing™ and Flex Housing™: www.cmhc-schl.gc.ca/en/inpr/bude/index.cfm

CMHC's Affordable Housing Ideas is a collection of concepts that may help you develop a plan of action to address local housing issues. It presents a range of strategies, illustrated by real case studies, that have been used by private, non profit and public sectors in varied contexts and for diverse purposes: www.cmhc.ca/en/inpr/afhoce/tore/afhoid/index.cfm

Ontario Association of Architects: Selecting an Architect: www.oaa.on.ca/client/oaa/OAAHome.nsf/web/Selecting+an+architect!OpenDocument

Tenant involvement in estate regeneration (U.K.): www.jrf.org.uk/KNOWLEDGE/findings/housing/H132.asp

Working with tenants to build strong, healthy communities: Toronto Housing Company: www.torontohousing.ca/tenant_life/

Bringing the Power of Design to Affordable Housing, SPARC BC, 2005: www.sparc.bc.ca/index.php?option=com_docman&task=doc_download&gid=30&catid=105&Itemid=110

Affordable Housing Techniques: A Primer for Local Government Officials: www.ginsler.com/documents/textaht.html

Affordable Housing Design Considerations Checklist–The United States Department of Housing and Urban Development: www.designadvisor.org/check/check.html

Good Neighbors: Affordable Family Housing, the first book of its kind to focus on design quality in affordable housing. A glossy, 270 page "coffee table" book, *Good Neighbors* was first published in Australia by The Images Publishing Group and subsequently in North America by the McGraw-Hill Companies.