



CANADA MORTGAGE AND HOUSING CORPORATION

PROJECT COSTING AND THE CONSTRUCTION PROCESS

Residential development is complex and costly, whether it is high-end condos or affordable rental housing for low income households. Skilled and diligent management and coordination are necessary to ensure accurate costing and a timely, efficient construction or renovation process.

When pursuing a vision of providing good quality affordable housing in your community, you may consider either new construction or renovation or conversion of an existing building. There is an array of specialists in costing, planning, managing, and building involved in the many aspects of multi-unit development and it is rare to find one person who can do it all. If your organization does not have an experienced staff person dedicated to the project, consider engaging a qualified development consultant to guide the process. This fact sheet outlines the

necessary elements to take into account, whether you contract the work or do it in-house.

Project Costing

Project costing is the process of assembling and confirming the capital costs, from project conception to project completion. As the concept develops into detailed plans and designs, the information provided by quantity surveyors and other professionals becomes clearer and more specific. When municipal approval costs are defined and contractors' prices are received, the project costing process becomes more precise. It is essential to have reliable financial information to successfully finance the project and market your units. Your development consultant, quantity surveyor, architect, and funding agencies can help you to get up-to-date figures.

Capital Costs

Capital costs are directly related to property development including 'hard' costs like land and construction and 'soft' costs such as consulting and legal fees, permits, and financing costs. Here is a list

of general categories and specific items that you will need to consider for your capital budget:

- **Land:** Purchase price; taxes, fees, legal costs related to acquisition of the property;
- **Servicing:** The costs of bringing power, telephone, water and sewer service, roads or sidewalks to the site;
- **Municipal Fees:** Development and building permits, levies, fees, development cost charges; property taxes during construction;
- **Professional Fees:** Architect, structural, mechanical and electrical engineers, geotechnical engineer, landscape architect; quantity surveyor; development consultant; legal counsel for land transfer, contract advice;
- **Construction Financing:** Interest on monies borrowed during the construction period only, mortgage insurance premium; lender fee;
- **Organizational Expenses:** Marketing; utilities to the site; liability and builder's risk insurance premiums during construction;
- **Construction, Renovation, or Conversion Costs:** All construction or renovation materials and labour;

in-suite appliances; common laundry, kitchen, and office equipment; amenity and dining furniture; landscaping; new home warranty fees;

- Contingencies: An allowance to cover unexpected expenditures;
- GST: If the Goods and Services Tax applies to your project, build this expense into your capital budget.

The Construction Process

Knowing what to expect during the construction phase will guide you and your group in planning to monitor the process and conduct organizational activities so that the project is ready to occupy when the construction is complete. The actual schedule of a construction project will vary based upon many factors such as size and complexity of the proposed development, site and weather conditions, material and contractor availability, the knowledge and experience of those managing the project, and the changes made to the original contract after construction has begun. Most construction and renovation projects will involve the following elements:

Design, Site Development, and Municipal Approvals

The architect will provide design drawings to conform to the housing and service program for the future residents and comply with building code and municipal planning bylaws. Once planning approval is secured and funding/financing in place, the project is ready to proceed to full working drawings, tendering and the building permit process. These areas are covered in separate fact sheets.

Suggested Activities

- Use a spreadsheet software program to calculate your budget and keep track of each version as the information changes.
- Before you have professional consultants on board, you can still develop a preliminary budget: Talk to other groups that have recently developed housing to find out about their costs. Research local and project-specific information, and then compile the results.
- Have a professional quantity surveyor on your development team to track construction costs based on the architect's design as it evolves from concept to final working drawings.
- Consult with a qualified tax accountant to determine if you are required to remit Goods and Services Tax on the project upon completion
- Get in touch with local non-profit housing providers to find out about typical operating expenses for similar buildings to your planned project.
- Check out the CMHC Affordable Housing Project Viability Assessment Tool for rental projects at www.cmhc-schl.gc.ca.

Construction Procurement Models

The two most common construction contracts used to construct or renovate affordable housing are stipulated price contract and design-build or turnkey contract.

In the stipulated price contract, the sponsor first awards an architect/engineer contract to design the project. After detailed project plans and drawings are completed, a contractor is selected, usually based on competitive bidding, to perform the construction work. The contractor then takes full responsibility for completing the project on time and at the tendered price, under the terms of the construction contract. With the design-build contract, the sponsor contracts with a general contractor or developer to both design and build the project at a fixed price.

Construction Stage

Construction projects work through the following steps: foundation; framing; roofing; installation of windows and doors; siding; mechanicals including plumbing, electrical, heating, ventilation and air conditioning; insulation; drywall; painting; interior trim and other finish work; flooring; cabinets, and countertops.

The architect administers the construction contract for their client (either the design-build/turnkey developer or the sponsor in a stipulated price project). The contractor submits regular monthly requests for payment for approval by the architect. In most contracts there will be a 10% holdback on monthly payments in case the contractor fails to pay for materials or contracts and a lien is placed against the project. These funds are held in trust and only paid to the contractor the day the holdback period expires by provincial law.

As the owner, your group will be called upon to make certain decisions during the course of the construction such as changes to the design or materials, sometimes related to budget issues. Your architect and development consultant should be providing progress reports on the construction and guiding the decisions you may face.

Renovation/Conversion Stage

Renovation may involve simple repairs or extensive retrofit of structural or mechanical systems to a building you own or plan to purchase. An existing apartment building may retain the unit layouts but require an elevator or dining room to meet the needs of more frail residents. Municipal and provincial building codes and regulations may require upgrades of electrical or mechanical systems to meet modern standards. Making the building more energy efficient may actually pay for the upgrades over time with the money saved on heat, light, and water. An existing residential building that is occupied requires a plan for relocating tenants while renovations are underway in their individual units.

If you are converting a non-residential building, such as an office building or warehouse, there are other considerations. Conversion to residential from office space would entail significant revisions to the building layout to create dwelling units with bathrooms, kitchens, and bedrooms as well as mechanical and electrical upgrades. There may also be environmental hazards in older industrial buildings, requiring significant upgrades to residential standards.

Suggested Activities

- Learn more about construction procurement models and construction contracts at the website of the Canadian Construction Documents Committee, www.ccdc.org
- Ensure that you have adequate insurance on the property during construction, renovation, or conversion, as well as builder's risk insurance and construction performance bonds on the contractor.
- Prepare for management during the construction or renovation phase by:
 - Marketing the units and/or developing a waiting list;
 - Developing management policies, systems and structures;
 - Planning amenity and recreational programs; and
 - Preparing for move-in.
- Become familiar with the general scheduling path in order to work in coordination with the construction or renovation phases.
- Be sure to arrange with funders and lenders for timely payment to the general contractor.
- Hold regular meetings with existing tenants in a residential renovation project, keeping them informed of the plans and the progress, and addressing their concerns about the impacts of the changes.

Always get a written contract with the renovation company, describing the work to be done and what it will cost. No matter how small or large the scope of the renovation or conversion project, be sure that the renovator is licensed, hires skilled workers, and is properly insured.

Building Turnover/Rent-Up

As the project nears completion, the architect identifies the construction deficiencies and ensures that the contractor has provided all of the necessary documentation specified in the construction contract. A list of

deficiencies is provided to the contractor and a holdback value is assessed, to be paid upon final project completion. When the architect declares that construction is substantially completed, the municipality will inspect the building to ensure it conforms to basic safety standards and then issue an Occupancy Permit. Depending on the type of housing tenure and target population, the building rent-up could take a few days or several months.

Suggested Activities

- Have the architect arrange for your group to have a tour of the project for a demonstration of how all the systems work.
- Develop a detailed plan for move-in that takes into account the use of the elevator(s) when scheduling residents based on the floor they will occupy.

Warranty Period/ First Year Inspection

Most construction contracts call for a one-year warranty period. The warranty period is for all of the building elements. Some elements such as the roof and

windows will have a longer warranty period. The contractor must correct deficiencies during this period. At the end of one year from turnover, there will be an inspection to correct any new deficiencies and to ensure the building systems are still operating correctly.

Suggested Activities

- Pay careful attention to the warranties and guarantees when creating your property maintenance policies, systems and procedures. Some warranties are not valid if recommended scheduled maintenance routines are not carried out.

Conclusion

Once you know that your project is viable the wheels can be set in motion to build, renovate, or convert it. This is perhaps the most intense time period, with critical deadlines and decisions that will have a serious impact on the end result. It is important to make good use of the professional consultants in your development team to ensure accurate cost estimates, a cost-effective design, and a smooth building process that completes on time.

Further Resources

Affordable Housing Project Viability Assessment, and the Affordable Housing Project Viability Assessment Tool for rental projects, CMHC: www.cmhc-schl.gc.ca

Affordable Housing Design Advisor: www.designadvisor.org

The Royal Architectural Institute of Canada: www.raic.org/index_e.htm

Canadian Institute of Quantity Surveyors: www.ciqs.org/

Alberta Urban Municipalities Association's Affordable Housing Toolkit: www.munilink.net/live/AUMA/Toolkits

Canada Revenue Agency Self supply and the GST: www.cra-arc.gc.ca/E/pub/gm/19-2-3/19-2-3-e.html#P53_1524

Canadian Construction Documents Committee: www.ccdc.org/docs/docs.html

Canadian Construction Association: www.cca-acc.com/overview/overview.html

Canadian Home Builders Association: www.chba.ca/