



# DESIGN GUIDELINES

for Multi-Unit Affordable and Social Housing

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Version 1.4

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## 1. Introduction

Manitoba Housing's *Design Guidelines for Multi-Unit Affordable and Social Housing* provides a framework for developers seeking a project commitment from Manitoba Housing for development of new rental or cooperative housing.

The intent of this document is to provide basic design requirements and prescribed construction targets to ensure that buildings are designed and built to be efficient, sustainable, and cost-effective. Manitoba Housing's standards related to visitable design, accessible design, energy efficiency, modesty assurance as well as other design guidelines and standards are encompassed within this document.

This document is subject to regular review and revision by Manitoba Housing. Please contact Manitoba Housing at 204-945-5566 or toll-free at 1-866-689-5566 for the most up-to-date version of Manitoba Housing's Design Guidelines for Multi-Unit Affordable and Social Housing.

In all cases, the Manitoba Building Code, the Manitoba Electrical Code, the Manitoba Plumbing Code, the National Fire Code, the Manitoba Energy Code for Buildings, and municipal code/requirements take precedence over the requirements outlined in this document. Where there is a difference in requirements, the most stringent shall apply.

## 2. Applicability of this Document

The design guidelines and project requirements outlined in this document are intended primarily for the new construction of multi-unit residential buildings, namely:

- apartment buildings (including motel-style buildings) and;
- townhouse developments

For a project involving renovation of a vacant and derelict building, or conversion of a non-residential building to a residential use, the project requirements and design guidelines in this document are applicable to the greatest extent practical given the existing building conditions.

This document is intended to apply to housing for all client groups that are able to live independently with supports, if necessary. Manitoba Housing recognizes that in some cases accommodation may be necessary to meet the unique needs of a client group. Consideration may be given to housing models that are unable to meet the requirements of this document.

All sections of this document are applicable to projects where Manitoba Housing provides more than 35% in funding support toward the capital cost of a project or where Manitoba Housing provides a subsidy toward on-going operating costs

(excludes rent supplement program support), or on any other project specifically identified by Manitoba Housing.

All projects are encouraged to meet the standards outlined in this document. For projects that receive a capital funding contribution of 35% or less from Manitoba Housing, the project must at a minimum, unless otherwise authorized in writing by Manitoba Housing, meet the requirements of the following sections:

- Dwelling Units (section 8.3)
- Accessible Design (section 9)
- Energy Efficiency (section 13)
- Radon Gas Control (section 10.4)
- Ineligible Features (section 15)

### **3. Integrated Design Process (IDP)**

An integrated design approach must be employed throughout project development and must ensure that the appropriate team members are engaged.

An IDP involves an inter-disciplinary team working in a collaborative manner to achieve a high performing building by optimizing building design and construction of building systems. The process shall allow the team to problem solve, identify capital cost saving measures, and increase operating efficiency of the building.

The integrated design team typically involves, but is not limited to, the following: building owner or representative, sponsor, architect, development consultant (if applicable), mechanical engineer, electrical engineer, structural engineer, civil engineer, landscape architect, commissioning agent, construction manager (if applicable), Manitoba Housing, and other specialized consultants as needed by the project. Integrated design team meetings should occur regularly throughout project development. The IDP facilitator shall ensure that the required stakeholders are engaged at the appropriate stages of development.

### **4. Building System Commissioning**

Apartment buildings must be commissioned by an independent third party commissioning agent. The commissioning agent shall not be the project design engineer/architect, contractor, or owner's representative. At minimum, the commissioning agent will confirm the building's mechanical/electrical systems, envelope, and windows are designed and constructed to the owner's project requirements and to the design intent, calibrated to the specifications, and that building staff receive training and systems operation and maintenance (O&M) manuals. The Manitoba Housing Window Testing Guide and Air Leakage Testing Guide shall be adhered to for testing the buildings windows and envelope.

## 5. Construction Methods

New buildings shall be combustible construction, unless a concrete or steel frame structure is required by Code. Should Code allow for a combustible construction building, concrete or steel frame construction or an alternative construction method may be considered if determined to be more cost-effective or in other appropriately justified cases. Such consideration shall be made at Manitoba Housing's sole discretion. If non-combustible construction is permitted, the most cost-effective wall and floor systems that are appropriate for residential occupancy must be selected.

## 6. General Design Considerations

- .1 Buildings shall be designed to be spatially efficient and shall be at or below the acceptable space allocations for circulation and service rooms and amenity/program areas as detailed in sections 8.1.2 and 8.2.2.
- .2 Project design should generally reflect a modest accommodation including the size of units, amenities/common areas available, and finishes.
- .3 Building and landscaping design should strive to harmonize with the building styles and character of the surrounding neighbourhood.
- .4 Building and landscape design shall incorporate Crime Prevention through Environmental Design (CPTED) principles where appropriate. Further information on CPTED principles can be found at [www.rcmp-grc.gc.ca/pubs/ccaps-spcca/safecomm-seccollect-eng.htm](http://www.rcmp-grc.gc.ca/pubs/ccaps-spcca/safecomm-seccollect-eng.htm).
- .5 Durability and ease of maintenance should determine the selection of materials. At minimum the following items should be durable and the durability/life span should be indicated as part of the design development submission further outlined in Section 16.3:
  - Flooring
  - Cupboards and counters - plywood casework construction
  - Exterior walls – rainscreen construction
  - Shingles
  - Doors and windows - 25 year to lifetime warranty
  - Interior finishes in high traffic areas

To be considered *durable*, millwork and flooring should have a commercial warranty period of not less than 10 years and exterior finishes should have a warranty period of not less than 40 years.

- .6 Where applicable, fixtures and finishes must be selected from Manitoba Housing's approved product list. The approved product list will be provided at the initial IDP meeting with Manitoba Housing. Additional information of

specifications and other documents available from Manitoba Housing are listed in Appendix “A”.

- .7 Low volatile organic compound (VOC) finishes, furnishings, products and materials should be selected whenever possible.
- .8 Selection of the primary heating/cooling energy source should consider availability, life-cycle cost implications, and initial capital cost. For space and domestic hot water heating, Manitoba Housing prefers natural gas for the fuel source wherever available.

## 7. Measurement Standard

Measurements shall be based on Building Owners and Managers Association (BOMA) *Multi-unit Residential Buildings: Standard Methods of Measurement – Gross Method (Method A)*. Insulation and finish thickness outside of the structural wall and floor plate may be disregarded from the calculation.

All measurements provided to Manitoba Housing shall be in metric but may also include imperial measurements.

## 8. Building Interior

Building interior includes interior circulation and service room areas, amenity space, programming areas (if applicable), and residential units. This section provides the size targets for each type of space.

### 8.1 Circulation and Service Rooms

- .1 Circulation space includes areas such as lobbies, corridors, interior stairs, and elevators.

Service rooms include areas such as electrical rooms, mechanical rooms, general storage areas (non-resident), garbage/recycling rooms and maintenance rooms.

- .2 *Maximum Space Allocation*

The combined circulation and service room areas should be 20-22% of the combined unit areas but must not exceed 25% of the combined unit areas. This includes all exterior and demising walls.

Table 1 provides an example of a space program. In this example the combined circulation and service room area is 466 m<sup>2</sup> (408 m<sup>2</sup> for circulation space plus 58 m<sup>2</sup> for service rooms) and the total residential

unit area is 2,048 m<sup>2</sup>. Therefore the combined circulation and service room areas represent approximately 23% of the residential unit area.

**Table 1: Project Example**

Space/Program	Description	# of units	Unit Size		Total Size	
			sq.ft.	m <sup>2</sup>	sq.ft.	m <sup>2</sup>
Residential Units	2 bedroom	8	775	72	6,200	576
	3 bedroom	13	958	89	12,454	1,157
	4 bedroom	3	1,130	105	3,391	315
<i>Total Residential Units</i>		<b>24</b>			<b>22,045</b>	<b>2,048</b>
Circulation	Lobby & Corridors				2,257	219
	Stairs				1,356	126
	Elevator				678	63
<i>Total Circulation</i>					<b>4,392</b>	<b>408</b>
Service Rooms	Electrical/Mechanical	2	113	10.5	226	21
	Maintenance room	4	59	5.5	237	22
	Elevator room	1	161	15	161	15
<i>Total Service Rooms</i>					<b>624</b>	<b>58</b>
Amenity Space	Resident Laundry	4	66	6	264	25
	Resident Storage	2	110	10	220	20
<i>Total Amenity Space</i>					<b>484</b>	<b>45</b>
<i>*Gross Building Area</i>					<b>27,545</b>	<b>2,559</b>

= 408+58 = 466m<sup>2</sup>  
or 5,016 sq.ft.

\*For this purpose, the GBA does not include insulation and finish thickness.

### .3 Building Entrance & Lobby Area (Apartment Buildings)

- .1 An accessible entrance as per Manitoba Building Code.
- .2 Provide a heated vestibule.
- .3 Provide a building intercom entry system.
- .4 All public doors must be controlled by a card access system. Further information on building access can be found in the *Security* section.
- .5 Provide a mailroom area that meets the requirements of Canada Post.
- .6 Provide a bulletin board in a visible area for posting of notifications.

### .4 Corridors

- .1 Corridors shall be at least 1500 mm wide or wider if required by Code.
- .2 Corner guards should be provided in high traffic areas and common hallways.

- .3 For seniors housing, provide continuous handrails on each side of the corridor that are Code compliant.

## .5 *Elevators*

- .1 Apartment buildings of two or more storeys must be equipped with an elevator. A lift is not an acceptable mode of vertical transportation.
- .2 A hole-less hydraulic elevator is the preferred elevator type, however consideration may be given to other types of elevators should the circumstances require.
- .3 One elevator is appropriate for a two to five storey building. Consideration for a second elevator may be given to a building that is five storeys or more.
- .4 Manitoba Housing will provide detailed elevator specifications at the outset of the IDP.

## 8.2 **Amenity & Administration Space**

- .1 Amenity space includes common rooms such as a multi-purpose room, kitchenette, public washroom, laundry rooms, and resident storage space.

Administration space includes office space and space for the delivery of on-site programming to support building residents (if applicable).

### .2 *Maximum Space Allocation*

- .1 For basic rental or cooperative housing buildings that do not offer on-site programming to residents, the maximum allowable combined amenity and administration space is 1.86 m<sup>2</sup> for every residential unit (approximately 20 sq.ft. per residential unit). For projects with less than 20 units, the amenity and administration space may include a total allowance of up to 37.16 m<sup>2</sup> (400 sq.ft.).
- .2 For rental or cooperative housing buildings that offer on-site programming to residents, the maximum allowable combined amenity and administration space is 4.65 m<sup>2</sup> for every residential unit (approximately 50 sq.ft. per residential unit).

On-site programming refers to the delivery of housing services and/or psycho-social/health supports within a building to support the building tenants. Housing services may include assistance with daily functioning, understanding and fulfilling responsibility as a tenant, help with social interactions, and connections to resources to prevent health and social challenges from interfering with successful tenancy.

.3 *Wheelchair Accessible Washroom*

A common universal toilet room shall be provided on the main floor of apartment buildings.

.4 *Laundry Facilities (Apartment Buildings)*

.1 The laundry equipment to unit ratio for apartment buildings is as follows:

Seniors & Singles – one washer and one dryer for every 15 units.

Families – one washer and one dryer for every 10 units.

.2 Revenue generating commercial grade washers and dryers shall be selected.

.3 Ventless clothes dryers are not permitted.

.4 Each laundry room shall be equipped with a single bowl laundry sink and a table or counter for folding laundry.

.5 Floor drain(s) shall be provided.

.6 Laundry rooms shall not be located below grade.

.7 Laundry rooms may provide a window to allow for natural light.

.5 *Resident Storage*

If adequate storage space appropriate for the resident type cannot be accommodated in the unit, then additional storage units may be created elsewhere in the building. Common storage areas shall be appropriately fire rated and modest in size.

### **8.3 Dwelling Units**

.1 *General*

.1 A dwelling unit must be self-contained with its own keyed entry door, contain a full bathroom and a kitchen or kitchenette. More information on locks and keying can be found in the *Security* section.

.2 Electrical outlets shall be no lower than 450 mm to their centreline above the floor.

- .3 Each unit must have its own independent climate control.
- .4 Heating/cooling controls and light switches shall be no higher than 1220 mm to their centreline above the floor.
- .5 All light switches shall be rocker style.
- .6 Provide all necessary rough-ins for cable television and telephone. Consult with service provider(s) on requirements.
- .7 Doors within a unit shall have a clear width of not less than 850 mm (915 mm preferred) or greater if required by Code.
- .8 All doors shall have levered door handles.
- .9 Light commercial grade resilient sheet or Luxury Vinyl Tile (LVT) flooring should be used in the unit. Bathrooms and kitchens must have light commercial grade resilient sheet flooring.
- .10 Walls should be constructed and sealed at the perimeter of every unit to prevent the migration of odors or insects between units.
- .11 Each bedroom shall have at least one operable window.

.2 *Unit Areas*

- .1 The following unit sizes are permitted:

**Table 2: Maximum Unit Sizes**

Unit Type	Size (m <sup>2</sup> )	Size (sq.ft.)	Occupants
Studio	32.5	350	1 – 2 persons
1-bedroom	55.4	594	1 – 2 persons
2-bedroom	72.4	779	2 – 4 persons
3-bedroom	89.2	960	3 – 5 persons
4-bedroom	105	1,130	4 – 7 persons

- .2 A variance of up to 5% is allowable for the unit areas identified in Table 2.
- .3 Floor areas for units designed for an individual living with a disability may exceed unit sizes. As a guideline, accessible units should be no greater than 12% above the unit sizes identified in Table 2. Requirements related to Accessible Design can be found in Section 9.

- .4 Where a design incorporates stacked townhouses with grade access, the minimum gross floor area may be increased by the space required for the additional stairway.
- .5 Studio suites are only permitted for the non-elderly or in other appropriately documented special circumstances deemed satisfactory at Manitoba Housing's discretion.

### .3 *Unit Entrance*

- .1 All units must have a keyed deadbolt on the entrance door. See *Security* section for more details on locks and keying.
- .2 For townhouses, a one level, no-step entrance – minimum 915 mm wide – on an accessible route shall be provided at the entrance doors.
- .3 Unit entrance shall provide a clear width of not less than 850 mm (915 mm is preferred).
- .4 The entrance door must include a peephole, at the appropriate height, for safety.
- .5 Hard wired doorbells shall be provided for townhouse units.

### .4 *Bathrooms*

- .1 Bathrooms should be accessible through the unit hallway whenever possible.
- .2 Bathrooms within units must include a sink, toilet, and bathtub complete with a handheld shower head or a shower stall.
- .3 For apartment buildings, bathrooms shall not be directly vented to the outdoors. Bathrooms should be mechanically vented with exhaust grilles in each bathroom that are collected from each suite and connected together to a common duct. The bathroom exhaust should also connect back to the central system heat recovery ventilator unit.
- .4 A low-flow pressure balanced lever faucet must be provided.
- .5 Bathroom walls should be reinforced with additional blocking or plywood panel to allow for the installation of grab bars.

- .6 Bathroom floors shall be light commercial grade resilient sheet flooring.

#### .5 *Kitchens*

- .1 A stainless steel, double bowl sink with a low-flow, pressure balanced lever faucet must be provided.
- .2 Kitchen appliances shall be white in colour and include a refrigerator, stovetop, an oven, and a range hood.
- .3 For apartment buildings, direct vent range hoods are not an acceptable solution for kitchen exhaust. A recirculation air range hood complete with a grease filter shall be provided above all stoves.

In addition, the suite's kitchen must also be continuously mechanically exhausted with a separate ducted grille located in the kitchen area proper. The grille is to be supplied with a grease filter if it is located less than 3 meters from the cooking surface. Kitchen suite exhaust ducts are to be collected and connected back to a central system heat recovery ventilator unit, which serves the entire building for ventilation air, in order to maximize energy recovery and minimize the number of duct penetrations through the building envelope.

- .4 The refrigerator must be Energy Star rated and should:
  - be 17 cu.ft. for 1 and 2 bedroom units
  - be 18 cu.ft. for 3 bedroom units
  - be 20.5 cu.ft. for 4 + bedroom units
  - include a frost free freezer
  - not include an ice-maker
  - not include a water line
- .5 Dishwashers are not permitted.
- .6 Kitchen floors shall be light commercial grade resilient sheet flooring.

#### .6 *Storage*

All units should contain storage space appropriate for the resident type. Consideration should be given to additional storage space within the building if adequate storage space cannot be created within the unit.

.7 *Laundry*

In-suite laundry within units is permitted in townhouses only. Ventless clothes dryers are not permitted. Laundry rooms shall include a floor drain and floors shall be resilient sheet flooring.

.8 *Balconies/Patios*

- .1 Balconies are permitted in apartment building units. Patios are permitted for units located at grade.
- .2 Balcony/patio access must be located from the living room or dining room area.

## 9. Accessible Design

### 9.1 Seniors Housing

All housing units intended for seniors must meet the requirements outlined in 9.3.

### 9.2 Single Non-Elderly and Family Housing

A minimum target of 10% of all affordable and social non-seniors housing units within a building must meet the requirements outlined in 9.3. If the total number of units is not a round number then the number shall be rounded up. For example, if there are 17 total affordable and social housing units then two units must meet the requirements listed in 9.3.

### 9.3 Required Features within Accessible Units

The accessible design features listed in Table 3 are minimum mandatory requirements. Manitoba Housing encourages developers to incorporate accessible design initiatives that go beyond those listed in this document.

**Table 3: Accessible Design Criteria**

<b>Required Features within Accessible Units (excludes common areas)</b>		<b>Minimum (mm)</b>	<b>Maximum (mm)</b>	<b>Preferred (mm)</b>
Doorways	Clear Width	850	950	915
Door hardware	Height from floor	915	1220	
Lever handles on interior doors and unit entrance door				
Easily opened doors				
Second peep hole	Height from floor	1,100	1,100	
Hallways with the unit	Width	915		1,220
Turning radii (all rooms)		1,500	1,750	
Window sills	Height from floor		800	
Outlets (telephone, cable, etc.)	Height from floor	450		
Light switches and intercom	Height from floor		1,220	
Thermostat controls	Height from floor	450	1,220	
Rods in clothes closets/shelves	Height from floor	900	1,220	
Lateral transfer area – by toilet		900		
Bathroom sink	Height from floor	800	860	
Mirror	Height from floor		1,000 or tilted	
Medicine cabinet	Height from floor		1,220	
Pull-up space under bathroom sink				
Offset pipes and drains under sinks				
Grab bars in bathroom (with reinforced bathroom walls) – design all towel bars as grab bars.		2		
Hand-held shower on an adjustable rod				
Pull-down seat in shower				
Lever-type pressure balanced faucets				
Knock-out cupboards below kitchen sink				
A refrigerator with a bottom mounted freezer				
*Kitchen Counter	Height from floor	810	850	
Rocker-style or large knob light switches				

**\*Consideration may be given to varying the kitchen counter heights for ease of use by all household members.**

## 10. Fire and Life Safety

### 10.1 Fire Safety Plan

- .1 A fire safety plan must be submitted to Manitoba Housing as part of the Design Development submission.
- .2 An emergency evacuation floor plan must be posted on each floor and titled as follows: "ATTENTION: HOW TO ACT IN CASE OF FIRE".
- .3 Verification of all fire safety systems must be conducted and all reports must be submitted to Manitoba Housing as part of the Close-Out submission.
- .4 Labels must be affixed to each fire safety system indicating the date of installation and certification.

### 10.2 Fire Alarm Systems

- .1 Addressable fire alarm systems are required in buildings that do not have 24 hour staff on-site.
- .2 Fire alarm systems must be monitored. Specifications for fire alarm monitoring are available from Manitoba Housing upon request.
- .3 Fire alarm systems shall be designed based on aspiration systems whenever practical.
- .4 All residential occupancies, whether sprinklered or not, shall have a rate-of-rise type heat detector located in each suite in proximity to the entrance from the public corridor.
- .5 Use linear heat detection cable for fire detection in attics and crawlspaces.
- .6 Use aspiration type smoke detectors for elevator shaft protection.
- .7 Duct type smoke detection shall not be employed on air handling equipment that draws its air supply solely from the exterior of the building. Air make up units shall be interlocked with the fire alarm operation so as to cease the movement of air upon the alarm signal from a fire alarm system.
- .8 A five per cent parts contingency shall be left on site in clearly identifiable packaging.
- .9 Should there be a requirement for fire pumps, as governed by the Code, Manitoba Housing requires an electric driven fire pump.

### 10.3 Safety and Health

- .1 Consider installing an Automated External Defibrillator.
- .2 Build spaces so they are not classified as a confined space, if possible. Avoid placing equipment in confined spaces.
- .3 For crawlspaces, ensure that ladders are fixed and that lighting is adequate. Crawlspaces should include ventilation to ensure that breathable air for service technicians, or a power source is located nearby to allow for portable ventilation as necessary.
- .4 Storage areas for cleaning chemicals/controlled products require a CSA certified eye-wash station in the same room.
- .5 Janitorial rooms should have low sinks/drains to empty mop pails. These rooms should also include proper weight-rated shelves affixed to the walls to prevent tipping.
- .6 Consider ease of maintenance when determining the location of lighting fixtures.

### 10.4 Radon Gas Control

Human exposure to elevated levels of radon gas in dwellings is known to cause lung cancer. Geographically, Manitoba is a hotspot for elevated levels of radon gas in existing homes.

In order to mitigate the potential for elevated radon levels in the construction of new buildings, Manitoba Housing requires that a Level 1 radon mitigation system be installed. A Level 1 system provides provisions for a radon rough-in vent stub, as well as provisions for a soil gas barrier and sealing soil gas entry points. Level 1 is not a complete radon reduction system, but allows for easier conversion to one in the future should it become necessary.

In the near future, CAN/CGSB 149.11 will be finalized and can be utilized as a guiding document for the design of the Level 1 radon reduction system. For more information regarding radon testing and mitigation, contact the Manitoba Housing Environmental Coordinator at 204-945-6101.

## 11. Security

### 11.1 General

- .1 Building design shall incorporate CPTED principles. Blind spots and alcoves must be avoided.
- .2 Plans for building security measures including building access systems and video monitoring must be reviewed and approved by Manitoba Housing.

### 11.2 Building Access

- .1 Provide a building intercom entry system. The intercom system must be hard wired to each unit and functionality must not depend on telephone service to the housing units.
- .2 Provide a card access system with card readers on all public entrances.
- .3 Consideration should also be given to installing card readers on common laundry room doors.
- .4 Dead locks should be installed on service rooms that are not monitored by camera.

### 11.3 Keying

- .1 All locks within the building must utilize Schlage Large Format Interchangeable Cores.
- .2 All locks within the building must be operated by a Grand Master Key (A).
- .3 All tenant unit locks are to be keyed different and under the Grand Master Key (A) and Sub Master Key (AA).
- .4 All non tenant spaces (storage, electrical, boiler, roof, entrances, etc) are to be keyed differently and under the Grand Master Key (A) and Sub Master Key (AB).
- .5 The master key system must include a minimum of 8 spare changes for every unique change used within the project.

## 11.4 Video Monitoring

- .1 Every building must include a video monitoring system.
- .2 Video cameras must be installed and positioned to monitor, at minimum, the following areas: front vestibule, building exits, common areas on main floor, and elevator area.
- .3 Consideration for additional video monitoring should be informed by a CPTED assessment and a review by Manitoba Housing's security team.
- .4 Monitoring and surveillance must conform to the Manitoba Ombudsman's *Video Surveillance Guidelines* found here:  
<https://www.ombudsman.mb.ca/uploads/document/files/video-surveillance-guidelines-en.pdf>.

## 11.5 Data Hardware Room

- .1 Space must be available in the building to accommodate video data hardware. This space may be a dedicated room or a non-dedicated room such as an electrical room.
- .2 Locations that house data hardware must be locked at all times and restricted to authorized personnel only.
- .3 Dedicated data hardware rooms must be large enough to accommodate a 24" by 24" rack for the hardware.
- .4 If data hardware equipment is placed in a non-dedicated room, sufficient space must be provided to accommodate a 24" by 24" locking cabinet.
- .5 If the data hardware shares a space with other thermal generating equipment, an assessment of cooling requirements should be undertaken. Sprinkler heads and waterlines should not be placed directly above data hardware.

## 12. Building Exterior

### 12.1 General

- .1 Building and landscaping design should strive to harmonize with the building styles and character of the surrounding neighbourhood.
- .2 Building and landscape design shall incorporate Crime Prevention through Environmental Design (CPTED) principles where appropriate.

## **12.2 Landscaping**

- .1 Landscape design shall be simple and low maintenance.
- .2 Low water landscaping principles and practices shall be applied.
- .3 Trees should be located at an appropriate distance from the building and water/sanitation lines to avoid maintenance and foundation problems.

## **12.3 Site Circulation and Walkways**

- .1 Drop-off points/loading zones shall be of adequate size to accommodate service vehicles.
- .2 Vehicular drop-off points and pedestrian entrances shall be clearly identifiable.
- .3 Consideration must be given to the number and size of garbage and recycling bins to ensure that collection trucks are able to access the area for pick-up.
- .4 Garbage areas must be isolated and screened from amenity spaces and units located at grade.
- .5 Walkways shall be non-slip on a compacted and level base. Width and slope shall allow for wheelchair accessibility with no steps to entrance and exit points from the parking area. Ramps shall conform to the local code or by-law.

## **12.4 Amenity Space**

- .1 Outdoor amenity areas should be accessible from interior common spaces.
- .2 Amenity spaces may include a recreation area with benches or maintenance free, durable and secure outdoor furniture.
- .3 For family housing, a play area for children may be included. Consideration must however be given to the proximity of public playgrounds to the building when deciding to incorporate a play area in the project.
- .4 Outdoor amenity areas should be universally accessible.

## 12.5 Lighting & Signage

- .1 Ensure the building entrance / exits are well lit.
- .2 Provide adequate exterior lighting to walkways, parking areas, amenity spaces, and building entrances.
- .2 Exterior lighting shall not create light pollution for neighbours or residential units located in the building.
- .3 Provide easy to read building signage.
- .4 Ensure building signage is adequately lit at night.

## 13. Energy Efficiency Requirements

All buildings receiving financial assistance from Manitoba Housing and that are bound by the Manitoba Energy Code for Buildings (MECB) must qualify for Power Smart Designation under Manitoba Hydro's Power Smart New Buildings Program 2.0 – Performance Path. Developers are encouraged to familiarize themselves with the requirements of the New Buildings Program in the early stages of project design. More information on the New Buildings Program can be found by visiting Manitoba Hydro's website at: [http://www.hydro.mb.ca/your\\_business/new\\_building/index.shtml](http://www.hydro.mb.ca/your_business/new_building/index.shtml).

Buildings that are not bound by the MECB must meet the applicable Manitoba Hydro Power Smart requirements. For more information please visit Manitoba Hydro's website at:

[http://www.hydro.mb.ca/your\\_business/new\\_building/how\\_to\\_take\\_part.shtml](http://www.hydro.mb.ca/your_business/new_building/how_to_take_part.shtml).

The developer shall additionally apply to Manitoba Hydro for Energy Modeling financial incentives if available.

## 14. Green Building Requirements

Participation in the Residential Manitoba Green Building Program (GBP) is strongly recommended. The review and reporting of the GBP criteria (attached in Appendix "B") is necessary in order to capture the energy intensity of new buildings owned or subsidized by Manitoba Housing, and compare it to the national baseline, along with the recording of green house gas (GHG) emissions. Contact the Housing Delivery branch at Manitoba Housing for the most up-to-date information on the GBP by calling 204-945-4985.

## 15. Ineligible Features

- .1 The following features shall not be included in areas where Manitoba Housing is providing financial assistance:
  - Dishwashers
  - Microwaves
  - Central vacuum systems
  - In-sink disposal units
  - Motion activated sink faucets
  - Skylights
  - Jetted bathtubs
  - Wood burning or gas fireplaces
  - Greenhouses
  - Garages
  - In-suite laundry (except in appropriately documented circumstances at Manitoba Housing's sole discretion).
  - Additional baths or half baths for 3-bedroom units; larger units may be allowed an additional half bath if it is not on the same floor level as the main bath.
  - Non-standard wall, ceiling and floor finishes
  - Common areas finished with costly detailing

## 16. Design Document Requirements

All applicable documents listed in this section must be coordinated with all disciplines at all times prior to submission to Manitoba Housing for review. All measurements shall use the metric system and all drawing submissions shall be in AutoCAD format. Manitoba Housing may require further information and/or updated cost estimates at its sole discretion. Further document submissions that are not design related will be detailed in the prospective funding agreement with Manitoba Housing.

### 16.1 Conceptual Design Submission

This submission is based on the general concept and initial functional program of the project. A capital cost budget at this stage should be based on a Class D construction cost estimate with an expected level of precision of +/- 25%.

- .1 Submission of conceptual drawings and broad description of the proposed housing complex.
- .2 Submission of a completed Manitoba Housing Project Description and Estimated Cost Form.

## 16.2 Schematic Design Submission

This submission is based on a schematic design with drawings and documents that are completed up to 30%. The updated capital cost budget at this stage should be based on a Class C construction cost estimate with an expected level of precision of +/- 15%.

- .1 The following drawings must be submitted to Manitoba Housing:
  - .1 location and site plan
  - .2 schematic floor plans
  - .3 typical unit plans
  - .4 schematic cross sections
  - .5 schematic building elevations
  - .6 typical envelope assembly (roof, walls, floor)
  
- .2 The following reports/information must be submitted in writing to Manitoba Housing:
  - .1 Site investigation reports including geotechnical and environmental site assessment(s).
  - .2 Confirmation of the occupancy classification.
  - .3 A preliminary building design code analysis.
  - .4 A description and rationale relating to any areas that deviate from the design requirements contained in this document.
  - .5 A description of unique design features and/or unusual site conditions that are likely to increase the capital cost.
  - .6 A description of the proposed foundation/structural system.
  - .7 Outline specifications for all disciplines.
  - .8 Mechanical and electrical systems outline specifications.
  - .9 Preliminary design calculations for heating load, ventilation rates, water tanks, etc
  - .10 Preliminary energy model report for the project.
  - .11 Finish grades with paving and parking requirements.
  - .12 Storm draining solution and existing utility locations.
  - .13 Plumbing fixture brochure.

- .14 Letter from the Prime Consultant confirming that the Prime Consultant is aware of the deliverables required under Manitoba Hydro's Power Smart New Buildings Program 2.0 and that the project is being designed to achieve the Power Smart designation level (10% better than MECB).
- .15 Completed Manitoba Green Building Program Form 3 attached as Appendix "B".
- .16 An updated and completed Manitoba Housing Project Description and Estimated Cost (PDEC) form based on a Class C construction cost estimate. Please contact Manitoba Housing for a current template copy of the PDEC.
- .17 A description of the types and amounts of all contingencies included in the Class C cost estimate including: design, construction, escalation, pricing, and scope.
- .18 Confirmation of the expected degree of estimate accuracy.
- .3 Further design advancement shall not proceed until written approval is received from Manitoba Housing.

### **16.3 Design Development Submission**

This submission is based on design development that is completed up to 60%. The updated capital cost budget at this stage should be based on a Class B construction cost estimate with an expected level of precision of +/- 10%.

- .1 The following drawings/documents must be submitted to Manitoba Housing:
  - .1 Environmental and Demolition
    - .1 remediation plans (if required)
    - .2 demolition plans (if required)
  - .2 Civil
    - .1 property and surrounding utility layouts
  - .3 Landscape
    - .1 site plans – pedestrian and vehicular access and parking
    - .2 landscape plans – planting, grading, and building access.

- .4 Architectural
  - .1 roof plans
  - .2 floor plans
  - .3 unit plans
  - .4 stair plans
  - .5 fire separation and exit distance plans
  - .6 detail floor plans (if required)
  - .7 furniture layout plans
  - .8 exterior elevations
  - .9 interior elevations
  - .10 building cross sections
  - .11 major envelope details
  - .12 wall, floor, roof composition schedules
  - .13 preliminary door and window types schedules
  - .14 preliminary hardware schedules
  - .15 preliminary finish schedule
  - .16 preliminary sign schedule
  
- .5 Structural
  - .1 foundation plans
  - .2 floor framing plans
  - .3 roof framing plans
  
- .6 Fire and Life Safety
  - .1 security, alarm and fire, life-safety plans
  
- .7 Mechanical/Electrical/Fire Protection (if applicable by Code)
  - .1 mechanical equipment layout plan
  - .2 plumbing, heating, ventilation plans
  - .3 electrical plan
  - .4 power/other electrical system plans
  - .5 lighting plan
  - .6 mechanical/electrical room plan detail
  - .7 piping and/or system schematics
  - .8 main distribution single line diagram
  - .9 fixture mounting detail
  - .10 fire protection plan and details
  
- .8 Mechanical and electrical design submissions must indicate or provide:
  - .1 all plumbing fixtures, floor drains, plumbing and waste piping on the floor plan
  - .2 fire protection system details
  - .3 heating distribution system and ancillary component layout
  - .4 ventilation system layout

- .5 equipment schedules
  - .6 control system schematics
  - .7 Product Data sheets on all major mechanical components
  - .8 detailed information of products intended for use in the specification
  - .9 drawings of power, lighting and other electrical system locations for power, lighting, security, fire alarm, etc.
  - .10 complete electrical room details and equipment layout
  - .11 service and feeder calculations
- .2 The following reports/information must be submitted in writing to Manitoba Housing:
- .1 Record of revisions that address Manitoba Housing's comments from the previous review.
  - .2 Summary table of applicable building code requirements (confirmed or updated from previous submission).
  - .3 A description of unique design features and/or unusual site conditions that are likely to increase the project cost (confirmed or updated from previous submission).
  - .4 NMS-2007 3 part specifications.
  - .5 Structural assumptions used to calculate floor and roof loading.
  - .6 Updated energy model report for the project.
- .3 Further design advancement shall not proceed until written approval is received from Manitoba Housing.

#### **16.4 Working Drawings Submission**

This submission is based on working drawings that are approximately 90% complete. The updated capital cost budget at this stage should be based on a Class A construction cost estimate with an expected level of precision of +/- 5%.

- .1 A complete set of unstamped drawings, specifications and project manual data necessary for project tender shall be submitted to Manitoba Housing complete with a record of revisions that address Manitoba Housing's comments from the previous review.
- .1 Where Manitoba Housing owns the building, the 100% complete tender drawings must use the approved Manitoba Housing title blocks.

- .2 Project specifications shall use 6 digit National Master Specifications (NMS - 2007 or current).
- .2 Submission of building's updated energy model report and confirmation that the energy model has been submitted to Manitoba Hydro prior to the project tender as required for financial incentives under Manitoba Hydro's Energy Model Assistance program.
- .3 Project tender shall not proceed until written approval is received from Manitoba Housing.
- .4 Final stamped set of drawings, project manual (including specifications and contract documents), and energy model in electronic (PDF) format and the construction drawings in AutoCAD format on DVD.

### **16.5 Close-Out Documents**

- .1 The following list of documents shall be submitted to Manitoba Housing upon completion of the project. Not all items on the list may be applicable to the project.
  - .1 Complete O&M Manuals - 2 sets in hardcopy binder format and 1 set in electronic (CD or DVD) format.
    - .1 O&M Manuals must include all test reports, including start-up, balancing, and commissioning.
  - .2 As-Built Drawings - 2 sets in full size hardcopy format and 1 set in electronic (DVD) format.
  - .3 Test reports like concrete test results, window test results, and other similar test results
  - .4 Sprinkler System Test Report
  - .5 Fire Alarm Verification Report
  - .6 Emergency Generator Start-Up Test Report
  - .7 Fire Damper Test Report
  - .8 Air Balancing Report (TAB Report)
  - .9 Air Quality Test Results/Report
  - .10 Hydronic Balancing Report (for systems with pumps)
  - .11 Commissioning Report (1 hard copy and 1 electronic copy)
  - .12 Water Analysis Test Report (before & after water softener installation (rural areas))
  - .13 Boiler Start-Up Test/Commissioning Report
    - .1 Boiler Certificate (Letter from Department of Labour or Office of the Fire Commissioner)
  - .14 Chiller Start-Up Test/Commissioning Report
  - .15 Electrical Short-Circuit Coordination Study
  - .16 Energy Model Report (1 hard copy and 1 electronic copy)
  - .17 Energy Model Data/Source File

- .18 Manitoba Residential Green Building Program Form 4
- .19 Confirmation that all phone units are working and synchronized with the Enterphone system.
- .20 MECB Compliance Checklist – OFC Excel sheet to be completed by co-ordinating professional.
- .21 Letter from Manitoba Hydro confirming the building's Power Smart designation.
- .22 Certification letters from all professional including:
  - .1 Architectural
  - .2 Structural
  - .3 Civil
  - .4 Mechanical
  - .5 Plumbing
  - .6 Electrical
  - .7 Landscape
  - .8 Energy Code Compliance (from co-ordinating professional)
- .23 Occupancy Permit

**\*END OF DOCUMENT\***

## NOTES

This document has been prepared for the purpose of information only and shall be provided to external consultants prior to project start up. It is not recommended for design; however, it can be used to assist with some aspects of the project during design and construction phases.

## External Consultant's Project Start-up Guide No. PSU-01

- A. Document Intent:** To provide Manitoba Housing (MH) external consultants with the information required to start the development of project documents and information MH expects to be provided to complete MH projects.
- B. Disciplines:** All – This document is to be provided to the Prime Consultant only. Prime Consultants shall distribute the information to their design team accordingly.
- C. Application:** All capital, new build and renovation projects. Consultants shall refer to the MH Design Guidelines for Multi-Unit Affordable and Social Housing first and foremost. All information contained herein shall support the guideline document stated above.
- D. Available Documents:** MH PM/PO shall provide the external consultant with the following information from the PSU SharePoint site:

### MH External Consultant Package (Folder): Also refer to 'Components' Section 'F'

1. Design Guidelines – v1.3 and Appendices – June 2016 (as prepared by New Housing Delivery)
2. CAD drawing: m\_template\_cad\_consultants\_2010
3. CTB file: HCD\_mono
4. PDF: HCD\_color\_chart
5. Specifications Folder:
  - a. PDF: Finish Library Schedule
  - b. Word document: Spec Cover Template
  - c. Word document: Architectural Cabinetwork specification
  - d. Word document: Resilient Flooring specification
  - e. Word document: Ceramic Tiling specification
  - f. Word document: Door Hardware (Product List, Keying and Matrix – as consulted with locksmith)\*\*
  - g. Word document: Plumbing Fixtures specification
  - h. Word document: Residential Appliances specification

\* Provided only where applicable to project scope.

\*\* Note: this is not a specification but supplementary information to be incorporated into the specification section.

- E. Other Available Documents:** MH PM/PO shall provide the external consultant with the following design guidelines where applicable to project scope, and may not apply to all projects:
  6. Design Guidelines; available on Manitoba Housing PSU > Specs & Design Guidelines > Design Guidelines Sharepoint site.
    - a. AE-01 Attic Design Guide
    - b. AE-02 Crawl Space Design Guide
    - c. AE-03 Exterior Foundation Waterproofing Design Guide
    - d. AE-04 Window Testing Guide
    - e. AE-05 Building Envelope Air Leakage Testing Guide (New Construction)
    - f. AE-06 Building Envelope Air Leakage Testing Guide (Major Renovation)
    - g. AE-07 Door Selection Guide
    - h. AF-01 Residential Sprinklering Requirements
    - i. CS-01 Impermeable Drainage Apron
    - j. CS-02 Exterior Step Support
    - k. CS-03 Precautions with Use of Hambro Floor System

- l. EE-01 Lighting Design Guide\*\*\*
- m. MD-01 HRV Guideline\*\*\*
- n. MD-02 Furnace Guideline\*\*\*
- o. MD-03 HWT Guideline\*\*\*
- p. MD-04 Tempeff Guideline\*\*\*

\*\*\* -Provides standard details and minimum product standards for all MH projects.

**Note: All MH specifications and design guidelines are subject to review and may be revised. MH PM/PO to ensure the most current version has been provided to the external consultant.**

- 7. Asbestos Inventory;
  - a. Asbestos inventory available on Sharepoint site:
    - i. Manitoba Housing PSU > Arch & Bldg Science > Asbestos Inventory List.
  - b. Available lab reports and inventory photos:
    - i. Contact Greg Cherwonick for T: Drive location.

Note: locations vary and information for each asset may not be available.

**F. Components:** Files to be provided to external consultant; by MH PM/PO.

- 1. **Design Guidelines for Multi-Unit Affordable and Social Housing (as prepared by New Housing Delivery)**: consultants shall review this document that provides the expectations standard for new build MH projects and can also be related to capital and renovation MH projects. The following sections of the Guideline shall be considered for all MH projects;
  - a. 6. General Design Considerations
  - b. 8.3 Dwelling units
  - c. 9. Accessible Design
  - d. 10. Building Exterior
  - e. 11. Energy Efficiency Requirements
  - f. 13. Design Document Requirements
  - g. 14. Ineligible Features

All additional information within this external consultant guideline is designed to add to the requirements and offer information that is available to external consultants from MH.

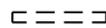
- 2. **CAD files: m\_template\_cad\_consultants\_2010** -includes MH standard title blocks for incorporation into all drawings. The file is in metric and contains layers, dimension styles, text styles and blocks. It is not mandatory that the external consultant use the layers, dimension styles or text styles within the file, however, MH expects;
  - a. **All drawings to meet and follow national CAD standards, and be clear, concise, and intended to communicate design intentions in a manner for bidding, construction and permit applications.**

Additional information on National CAD standards can be found at the following location:

<https://www.nationalcadstandard.org/>

- b. Where projects include demolition; demolition drawings shall be drawn separate of new/renovation drawings for clear intent, and shall be coordinated appropriately.
- c. All trade disciplines shall be drawn on separate sheet and coordinated appropriately. (i.e. plumbing independent of HVAC)
- d. See below 'Legend' detail for typical architectural graphic standards to be incorporated on all drawings.

LEGEND:

 EXISTING TO BE DEMOLISHED

 EXISTING TO REMAIN

 NEW CONSTRUCTION

 EXISTING DOOR.

 NEW DOOR (AND FRAME).

Demo, Existing and New line types are clearly identifiable based on their line type and line thickness. This allows for easy identification of construction drawings for MH personnel, bidders and contractors.

Also; existing doors to be direct lines, while new doors to be swinging arcs as shown. Existing doors to be demolished would incorporate the demolition line type.

- e. Note: All drawings shall be drawn in metric, but may also include imperial measurements under special circumstances. Where imperial measurements are provided with metric, drawing notes shall indicate that metric dimensions govern.
- f. Any of the additional information contained within the file is to be used at the consultant's discretion.
- g. Consultant to provide energy targets in relation to the overall effective R (or U) values for all construction assemblies designed for.
- h. The Consultant must identify which materials/sub-assemblies are providing each of the four control functions within details and specifications:
  - a. Water control,
  - b. Air control,
  - c. Thermal control and,
  - d. Vapour control

Consultant to ensure continuity for the four control layers and to meet the prescribed energy targets.

3. **CTB file: HCD\_mono** -MH has provided a CTB file to incorporate with the MH template for accurate printing of the MH title block. MH uses this CTB file when printing from CAD to ensure the colour based layers print with correct line weights.
4. **PDF: HCD\_color\_chart** -If the consultant uses another CTB file, MH has provided a color chart to confirm which colours the MH template layers relate to for printing. Consultants will need to update their CTB file or update the layers in the template to print the title block with correct line weights. Any information contained within the file is to the consultant's discretion.
5. **Specs Folder: Specifications shall conform to NMS 2007 (or latest) format.** MH has approved finish materials, mechanical and electrical equipment that are expected to be provided for and are shown within the current finish library schedule and design guidelines attached for review. MH prefers **performance based specification** over product based specifications (where no product is preferred), and the consultant shall provide for performance based specifications where possible. MH will provide the specification cover page template that shall be used for the specification cover, and can provide the preferred mechanical / electrical equipment upon request.

Within the specifications folder; "Architectural Cabinetwork", "Resilient Flooring", "Ceramic Tiling", "Plumbing Fixtures", and "Residential Appliances" specifications are provided and are expected to be utilized on all MH owned buildings. Also refer to the "Finish Library Schedule" for additional information. No exceptions to these specifications will be provided (refer to 'Available Documents' section).

Additional Notes:

- a. Windows shall be performance based and meet NAFS-08 standards – refer to NBC 5.10.2.2. And 9.7.4. Consultants shall familiarize themselves with these requirements and provide for appropriate performance specifications.
- b. Wired glazing is not acceptable for use on MH projects. Provide for 'clear fire rated glass'

where required on all MH projects. Refer to CGSB withdrawal notice of CAN/CGSB-12.11 Wired Safety Glass where necessary.

6. **Design Guidelines (and Specs for Consideration)**: Any design guidelines and additional specifications provided by MH are intended to be used as a guide. The consultant will take full responsibility for specifications related to the project. MH accepts no professional liability for the specifications provided to the consultants.

This document has been prepared as a guideline only and shall be reviewed by the Consultant(s) or Project Managers according to the specific circumstances of the project. It shall not be relied on as an engineering design, nor shall it replace or supersede any of the applicable regulations or contract documents including but not limited to the Manitoba Building Code, National Building Code of Canada, Manitoba's Workplace Safety and Health Act and associated regulations.

- G. **Environmental Consideration**: Each project shall be investigated for mould and for asbestos. External consultants are to consult their MH PM/PO to confirm the presence of any known environmental hazards from MH inventory records prior to investigation.

Under current MH Service Agreements / Standing Offer, MH can provide a third party for the following where applicable;

- Asbestos sampling
- Writing asbestos related specifications
- Conduct site inspection
- Conduct air monitoring/air clearance testing

Contact your MH PM/PO to coordinate the environmental requirements. Consultants shall coordinate all construction documents with the third party documentation.

Note: Additional environmental considerations may be relevant to the project and shall be discussed and coordinated with MH.

- H. **Testing and Verification**: Consultants are to include in their specification testing and verification of the following, when deemed appropriate; and shall also refer to the Manitoba Green Building Program section 3.7.

1. Envelope:
  - a. Fenestration
    - i. Windows
    - ii. Doors
    - iii. Aluminum frames and glazing (curtainwall, storefront, windows).
2. Testing and verification of Envelope above shall be determined from the following means;
  - a. Laboratory testing,
  - b. Mock-ups,
  - c. Installation testing,
    - i. Initial test setting the standard of construction
    - ii. Random sampling after initial test
  - d. Performance testing,
  - e. 1 (one) year warranty (follow-up) testing.
3. Systems
  - a. Mechanical and Electrical
    - i. Refer to Section 13.5 of MH Design Guidelines for Multi-Unit Affordable and Social Housing.

All of the above (Testing and Verification) shall now be standard on MH projects where applicable and in addition to other common testing not listed (i.e. concrete). Consultant's shall consider the project scope and provide for the appropriate testing and verification within the project specifications.

**I. Other Considerations:**

***Manitoba Housing prefers durable / robust products to ensure a long life. Manitoba Housing assets are subject to heavier wear and tear and abuse over their lifetime. The consultants shall provide for products and construction detailing appropriately. Manitoba Housing evaluates durability and ease of maintenance when reviewing projects specifications and construction drawings.***

**J. Revisions:**

Date:	Revision:
May 19, 2016	Revised Title and included document number.
May 19, 2016	Additional note under section F, number 2 regarding metric/imperial dimensions.
May 19, 2016	Additional note under section H, Testing and Verification to also refer to Manitoba Green Building Program section 3.7.
Dec 01, 2016	Updated document name for design guidelines under section D, number 1.
Dec 01, 2016	Clarified section F, number 2 - a.
April 07, 2017	Added note on wired glazing to additional notes under section F, number 5.
April 19, 2017	Added notes on typical graphic standards to be incorporated on all drawings. Refer to section F, number 2 – d.
November 21, 2017	Added notes on energy target R values and four control layers to be incorporated on all drawings. Refer to section F, number 2 – g and h.

# GBP Form 3: Information for RESIDENTIAL BUILDINGS

This Form supports the Residential reporting requirements and is part of your funding agreement. Residential building criteria are described in GBP Manual Section 6: <http://www.gov.mb.ca/mit/greenbuilding/index.html>

## SECTION A: Building Information *(To be completed by Building Owner or Funding Recipient<sup>1</sup>)*

**INSTRUCTIONS:** Return completed forms to the FUNDER<sup>2</sup> by the following timelines:

- GBP Form 3 must be returned before completion of schematic design
- GBP Form 4 must be returned within 60 days of building occupancy

PROJECT NAME: \_\_\_\_\_

STREET: \_\_\_\_\_ CITY: \_\_\_\_\_

POSTAL CODE \_\_\_\_\_

NUMBER OF UNITS: \_\_\_\_\_

NUMBER OF STOREYS: \_\_\_\_\_

BUILDING AREA<sup>3</sup>: (m<sup>2</sup>) \_\_\_\_\_

Description (if needed):

**Project Type:**       New Construction       Major Renovation       Addition

**Contribution from GRE<sup>4</sup> Organization:**      \$ \_\_\_\_\_

**Estimated construction cost<sup>5</sup>:**      \$ \_\_\_\_\_

**Estimated total capital cost<sup>6</sup>:**      \$ \_\_\_\_\_

**Property Legal Description:** \_\_\_\_\_

**Estimated Construction start date:**      \_\_\_\_\_ / \_\_\_\_\_ mm/yyyy

**Estimated Occupancy/Substantial completion date:**      \_\_\_\_\_ / \_\_\_\_\_ mm/yyyy

**Name of Funding Recipient<sup>1</sup>:** \_\_\_\_\_

<sup>1</sup>BUILDING OWNER (or FUNDING RECIPIENT): The legal owner of the property and/or the organization that enters into a funding agreement with a GRE to construct, add to or renovate a building. To complete the forms the owner may assign a delegate.

<sup>2</sup>FUNDER: A GRE<sup>4</sup> organization that provides funds for a building project.

<sup>3</sup>BUILDING AREA: The total of each horizontal floor area above grade measured to the outside face of the exterior wall. Where a floor is partially below grade and area is to be occupied, occupied floor area is to be included in total. Where exterior envelope is complete but interior is left unfinished for future occupancy, the unfinished area is to be included in total.

<sup>4</sup>GOVERNMENT REPORTING ENTITY (GRE): Core government and Crown organizations, government business enterprises and public sector organizations such as regional health authorities, school divisions, universities and colleges. A list is provided in the Government of Manitoba Annual Report, Summary Financial Statements, Schedule 8.

<sup>5</sup>CONSTRUCTION COST: The direct costs related to construction. Does not include design fees or land. Construction costs include materials, labour and installation.

<sup>6</sup>CAPITAL COST: Includes construction costs, design and other professional fees plus other costs related to the project.

# GBP Form 3: Information for RESIDENTIAL BUILDINGS

## Section B: Green Building Criteria *(To be completed by Building Owner or Funding Recipient<sup>1</sup>)*

**INSTRUCTIONS:** Review the criteria below and confirm with a "✓" that it will be added to the Owner's Project Requirements (OPR)\* and be conveyed to the project team. If a criteria is not confirmed with a check, provide a narrative for the funder, explaining the rationale. Certain criteria have reporting requirements on GBP Form 4. Ensure reporting requirements are assigned to the project team during design. Refer to GBP Manual - Section 6 for descriptions of the following GBP criteria. All the criteria are achievable in Manitoba.

### 1. Verify Energy Efficient Design

*Protects the owner investment, proves delivery of green building criteria and provides quality assurance.*

Complete section applicable to Part 3<sup>†</sup> or Part 9<sup>♢</sup>, Class C (residential occupancy) according to Manitoba Building Code.

**Part 3<sup>†</sup> (indicate acceptance of design, commissioning and testing commitments):**

<b>1.1 Energy Efficient Design Standard</b> Design building to meet the Manitoba Hydro Power Smart New Buildings Program. Contact Manitoba Hydro Power Smart Program during pre-design to review the program requirements.	<input type="checkbox"/> Report Required
<b>1.2 Commissioning</b> At minimum, a Commissioning Professional will verify that the buildings mechanical/electrical systems, envelope and windows are designed and constructed to the Owner's Project Requirements (OPR), calibrated to the specifications and building staff received training and systems manuals. Refer to GBP Guideline 3.5.	<input type="checkbox"/> Report Required
<b>1.3 Testing</b> Refer to GBP Guideline 3.7 Airtightness and Water Penetration Testing for Residential Buildings. - Inspect/test air leakage and water penetration at windows, doors, walls, skylights and curtain walls at mock up and prior to project close out - Test air and water tightness of the building envelope Units or assemblies that fail must be corrected and retested at contractor's expense until a passing grade is achieved. Results must be reported to the Commissioning Professional.	<input type="checkbox"/> Report Required

**Part 9<sup>♢</sup> (indicate acceptance of design, commissioning and testing commitments):**

<b>1.1 Energy Efficient Design Standard</b> Design building to meet the Manitoba Hydro Power Smart New Homes Standard. Contact Manitoba Hydro Power Smart Program before pre-design to discuss the program requirements.	<input type="checkbox"/> Report Required
<b>1.2 Commissioning</b> Air balance testing is required for ventilation and heating systems in accordance with Heating Refrigeration and Air Conditioning Institute of Canada (HRAI). Complete the Residential and Ventilation Record and review the results with the owner and project team immediately after testing.	<input type="checkbox"/> Report Required
<b>1.3 Testing</b> Blower door test is required and must achieve overall tightness of less than or equal to 1.5 air changes per hour @ 50 Pascal's (ACH50). See GBP Guideline 3.7.	<input type="checkbox"/> Report Required

### 2. Project Planning & Design

*Maximizes potential for occupant comfort, optimizing community infrastructure and financial/environmental sustainability.*

2.1 Use an integrated design approach. See GBP Guideline 3.3. Some projects will not require all the professionals listed below. Only identify the professionals currently engaged in your project:  Report Required

	NAME & ORGANIZATION
IDP Facilitator:	_____
Architect:	_____
Sustainability Consultant:	_____
Commissioning Professional:	_____
Mechanical Engineer:	_____
Electrical Engineer:	_____
General Contractor:	_____
Energy Modeller:	_____
Building Operator:	_____
Landscape Architect:	_____
Interior Designer:	_____
Occupant Representative:	_____

\* Owner's Project Requirements: A document that describes the building owner's goals, building performance expectations and requirements for the project and its commissioned systems. It is used throughout project delivery and the commissioning process as a reference for baseline decision making.

† PART 3 BUILDING: A building whose area exceeds 600 m<sup>2</sup> or is 3 storeys or more in height.

♢ PART 9 BUILDING: The building that is 3 storeys or less in height with a building area not exceeding 600 m<sup>2</sup>.

## GBP Form 3: Information for RESIDENTIAL BUILDINGS

<b>2. Planning &amp; Design (continued)</b>		
2.2	Conduct a life-cycle cost analysis on major building systems (envelope, HVAC, lighting & renewables).	<input type="checkbox"/>
2.3	Provide a permanent space for sorting and storage of recyclables.	<input type="checkbox"/>
2.4	Provide secure, convenient, accessible active transportation storage facilities.	<input type="checkbox"/>
2.5	Design a sustainable landscape to reduce potable water use.	<input type="checkbox"/>
2.6	Conserve potable water. Select efficient fixtures/fittings and consider other conservation measures.	<input type="checkbox"/> Report Required
2.7	Design for healthy air quality. Design ventilation systems in accordance with ASHRAE 62.1-2013 (sections 4-7) for Part 3 buildings and in accordance with CAN-CSAF326 M91 for Part 9 buildings.	<input type="checkbox"/>
2.8	Install a permanent meter(s) to measure potable water use for the building and grounds.	<input type="checkbox"/>
2.9	Install a permanent meter(s) to measure each energy source used in the building and grounds.	<input type="checkbox"/>
2.10	Locate building close to community amenities.	<input type="checkbox"/>
<b>3. Adaptation &amp; Resilience</b> <i>Reduces potential risks associated with climate change and energy supply volatility.</i>		
3.1	Consider renewable energy source options.	<input type="checkbox"/> Report Required
3.2	Consider designing to accommodate future use of renewables.	<input type="checkbox"/> Report Required
<b>4. Use of Sustainable Materials</b> <i>Augments occupant health, supports resource conservation and supports a green economy in Manitoba.</i>		
4.1	Select low-emitting finishes, furnishings, products and materials.	<input type="checkbox"/>
4.2	Give preference to products manufactured in Manitoba.	<input type="checkbox"/>
4.3	Give preference to materials with recycled content.	<input type="checkbox"/>
4.4	Consider the reuse of existing buildings and salvaged building components.	<input type="checkbox"/>
<b>5. Responsible Construction</b> <i>Protects the community &amp; the environment by using construction practices that avoid waste and pollution. See GBP Guideline 3.4</i>		
5.1	Require plans for Erosion and Sedimentation Control.	<input type="checkbox"/>
5.2	Require plan for Indoor Air Quality Management.	<input type="checkbox"/>
5.3	Implement a Construction Waste Management plan, report construction & demolition waste diverted from landfill.	<input type="checkbox"/> Report Required
<b>6. Transition to Occupancy</b> <i>Ensures persistence of green building investments during occupancy.</i>		
6.1	Develop non-smoking policy/practices to address and prevent smoke migration.	<input type="checkbox"/>
6.2	Participate in local recycling programs where feasible.	<input type="checkbox"/>
6.3	Track/monitor building energy use, water use and ghg emissions.	<input type="checkbox"/> Report Required
6.4	Require the purchase of energy efficient electronics and appliances.	<input type="checkbox"/>
6.5	Require the purchase of low emitting products and furnishings.	<input type="checkbox"/>
6.6	Require green cleaning methods, equipment and products.	<input type="checkbox"/>
6.7	Provide energy and water use education to occupants.	<input type="checkbox"/>

### Building Owner Acknowledgement (Check the boxes that apply and sign below):

- I have reviewed the applicable sections of the GBP Manual and included the checked criteria in the OPR.
- I will convey the GBP criteria in Section B to the project team.
- I am providing GBP Form 3 to the FUNDER before completion of schematic design.
- I will provide GBP Form 4 & supporting documentation to the FUNDER within 60 days of occupancy.
- I will develop an "energy and water use" education package and distribute it to building occupants.

NAME OF BUILDING OWNER OR FUNDING RECIPIENT (PRINT)

POSITION

SIGNATURE OF BUILDING OWNER OR FUNDING RECIPIENT

DATE (mm/yyyy)

PHONE:

EMAIL:

# GBP Form 3: Information for RESIDENTIAL BUILDINGS

## SECTION C1: *To be completed by the FUNDER (Project/Funding Officer)*

**INSTRUCTIONS TO FUNDER:**

**GBP FORM 3 AND GBP FORM 4 ESTABLISH THE REQUIREMENTS OF THE MANITOBA GREEN BUILDING POLICY and THE MANITOBA GREEN BUILDING PROGRAM.**

GRE organizations must:

- Confirm that the GBP requirements are included in applicable funding agreements
- Collect GBP Form 3 and GBP Form 4 within the appropriate timelines (see Section A: Instructions to Owner)

\_\_\_\_\_  
NAME OF PROJECT/FUNDING OFFICER

\_\_\_\_\_  
FUNDER (Department or Branch)

\_\_\_\_\_  
PHONE: (PROJECT/FUNDING OFFICER)

\_\_\_\_\_  
EMAIL:

\$ \_\_\_\_\_  
PROVINCIAL CONTRIBUTION

\_\_\_\_\_  
FILE NUMBER

\_\_\_\_\_  
DATE of FUNDING AGREEMENT (mm/yyyy)

\_\_\_\_\_  
SIGNATURE OF PROJECT/FUNDING OFFICER

\_\_\_\_\_  
DATE of FORM 3 RECEIVED (mm/yyyy)

## SECTION C2: *To be completed by the FUNDER's Green Building Program Liaison*

- INSTRUCTIONS:**
1. Email GBP Form 1 and any attachments to GBCT [greenbuilding@gov.mb.ca](mailto:greenbuilding@gov.mb.ca) within 10 days of receipt.
  2. Retain a copy of this form to prove compliance with the Manitoba Green Building Policy.

\_\_\_\_\_  
NAME OF LIAISON

\_\_\_\_\_  
DEPARTMENT

\_\_\_\_\_  
SIGNATURE OF LIAISON

\_\_\_\_\_  
DATE SUBMITTED TO GBCT (mm/yyyy)

## Section C3: *To be completed by Green Building Coordination Team (GBCT)*

\_\_\_\_\_  
NAME & SIGNATURE OF GBCT

\_\_\_\_\_  
DATE RECEIVED (mm/yyyy)

# GBP Form 4: Reporting for RESIDENTIAL BUILDINGS

This Form is required by Manitoba's Green Building Policy and forms part of your funding agreement. Descriptions for this reporting requirement is found in the GBP Manual Section 6: <http://www.gov.mb.ca/mit/greenbuilding/index.html>

## SECTION A: Building Information (To be completed by Building Owner or Funding Recipient<sup>1</sup>)

**INSTRUCTIONS:** GBP Form 4 must be returned within 60 days of building occupancy

_____		
PROJECT NAME:		
_____	_____	_____
STREET:	CITY:	POSTAL CODE
_____	_____	_____
NUMBER OF UNITS:	NUMBER OF STOREYS:	BUILDING AREA: (m2) <sup>3</sup>
<b>Project Type:</b>	<input type="checkbox"/> New Construction	<input type="checkbox"/> Major Renovation
<b>Contribution from GRE<sup>4</sup> Organization:</b>	\$ _____	
<b>Construction cost<sup>5</sup>:</b>	\$ _____	
<b>Total capital cost<sup>6</sup>:</b>	\$ _____	
<b>Property Legal Description:</b>	_____	
<b>Construction start date:</b>	____ / ____ mm/yyyy	
<b>Occupancy date:</b>	____ / ____ mm/yyyy	
<b>Name of Funding Recipient<sup>1</sup>:</b>	_____	

### COMPLETENESS CHECKLIST:

- Table 1 Energy Efficient Design & Testing **AND**  Power Smart Acceptance Letter
- Table 2 Commissioning
- Table 3 Integrated Design Process
- Table 4 Evaluate Renewable Energy Sources
- Table 5 Conserve Potable Water - Efficient Fixtures & Fittings
- Table 6 Conserve Potable Water - Conservation Options
- Table 7 Construction Waste Management
- Table 8 Energy Use, Water Use & GHG Tracking

<sup>1</sup>BUILDING OWNER (or FUNDING RECIPIENT): The legal owner of the property and/or the organization that enters into a funding agreement with a GRE to construct, add to or renovate a building. To complete the forms the owner may assign a delegate.

<sup>2</sup>FUNDER: A GRE<sup>4</sup> organization that provides funds for a building project.

<sup>3</sup>BUILDING AREA: The total of each horizontal floor area above grade measured to the outside face of the exterior wall. Where a floor is partially below grade and area is to be occupied, occupied floor area is to be included in total. Where exterior envelope is complete but interior is left unfinished for future occupancy, the unfinished area is to be included in total.

<sup>4</sup>GOVERNMENT REPORTING ENTITY (GRE): Core government and Crown organizations, government business enterprises and public sector organizations such as regional health authorities, school divisions, universities and colleges. A list is provided in the Government of Manitoba Annual Report, Summary Financial Statements, Schedule 8.

<sup>5</sup>CONSTRUCTION COST: The direct costs related to construction. Does not include design fees or land. Construction costs include materials, labour and installation.

<sup>6</sup>CAPITAL COST: Includes construction costs, design and other professional fees plus other costs related to the project.

# GBP Form 4: Reporting for RESIDENTIAL BUILDINGS

## Section B: Project Report *(To be completed by Building Owner or Funding Recipient<sup>1</sup>)*

**INSTRUCTIONS:** Complete the following tables and submit the form to your FUNDER. Refer to GBP Manual - Section 6 for guidelines and criteria descriptions.

**Table 1: Energy Design & Testing (GBP Form 3 criteria 1.1 & 1.3)**

Airtightness and Water Penetration Testing Indicate "✓" to confirm the requirement was met. Leave blank if the requirement was not met or attempted. Only complete the column for applicable building type, Part 3 or Part 9	PART 3: Residential Buildings	PART 9: Residential Buildings
ASTM E783- Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors	<input type="checkbox"/>	<input type="checkbox"/>
ASTM E1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference Dynamic Water Penetration	<input type="checkbox"/>	<input type="checkbox"/>
ASTM E1186 – Practices for Air Leakage Site Detection in Building Envelopes and Air Barriers	<input type="checkbox"/>	<input type="checkbox"/>
AAMA 501.1- Standard Test Method for Water Penetration of Windows, Curtain Walls, and Doors Using Dynamic Pressure	<input type="checkbox"/>	<input type="checkbox"/>
AAMA 501.2 – Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls & Sloped Glazing Systems	<input type="checkbox"/>	NA
ASTM D4551 – Test Method for Pull-off Strength for Coatings Using Portable Adhesion Testers	<input type="checkbox"/>	<input type="checkbox"/>
<b>Air leakage testing protocol Part 3: Residential Buildings:</b> *USACE Air Leakage Test Protocol For Building Envelopes version 3. *This will be superseded by ASTM WK35913 Standard Test Method for Determining the Air Leakage Rate of Large or Multi Zone Buildings upon publication.	<input type="checkbox"/>	NA
<b>Air leakage testing protocol Part 9: Residential Buildings</b> CGSB 149.10 Determination of the Air tightness of Building Envelopes by the Fan Depressurization Method	NA	<input type="checkbox"/>
<b>Energy Efficient Design</b> Power Smart Program Acceptance Letter attached	<input type="checkbox"/>	<input type="checkbox"/>

**Table 2: Commissioning (GBP Form 3 criteria 1.2)**

Indicate "✓" to confirm the requirement was met. Leave blank if the requirement was not met or attempted. Only complete the column for applicable building type, Part 3 or Part 9	PART 3	PART 9
HRAI Residential Mechanical and Ventilation Record reviewed with building owner/project team.	NA	<input type="checkbox"/>
Commissioning Professional verified that building’s mechanical/electrical systems, envelope and windows were designed and constructed to OPR, calibrated to the specifications and building staff received training and systems manuals.	<input type="checkbox"/>	<input type="checkbox"/>

**Table 3: Integrated Design Process (IDP) (GBP Form 3 criteria 2.1)**

Identify IDP Members that participated throughout the design process:	NAME	ORGANIZATION
IDP Facilitator:	_____	_____
Architect:	_____	_____
Sustainability Consultant:	_____	_____
Commissioning Professional:	_____	_____
Mechanical Engineer:	_____	_____
Electrical Engineer:	_____	_____
General Contractor:	_____	_____
Energy Modeller:	_____	_____
Occupant Representative:	_____	_____
Project Manager:	_____	_____
Construction Manager:	_____	_____
Other:	_____	_____
Other:	_____	_____

# GBP Form 4: Reporting for RESIDENTIAL BUILDINGS

**Table 4: Evaluate Renewable Energy Sources (GBP Form 3 criteria 3.1 & 3.2)**

Identify the energy sources (other than natural gas, hydro electric, diesel and propane), that were evaluated (discussed in IDP session), installed or accommodated in the building design for future installation.

	Considered	Installed	Accommodated
Wind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar (thermal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Solar (photovoltaic)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ground Source Heat Pump	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biomass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Table 5: Conserve Potable Water - Efficient Fixtures & Fittings (GBP Form 3 criteria 2.6)**

Please list flow rates for the following:

Lavatory & hand faucet (l/m)	Shower head (l/m)	Kitchen faucet (l/m)	Water Closets (toilets) (l/f)	Urinals (l/f)	Pre-rinse spray valve (l/m)	Other	Other	Other
_____	_____	_____	_____	_____	_____	_____	_____	_____

**Table 6: Conserve Potable Water - Conservation Options (GBP Form 3 criteria 2.6)**

Identify the water saving measures that were considered/evaluated (discussed in IDP session), installed or accommodated in design for future installation.

	Considered	Installed	Accommodated
Greywater re-use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rainwater Collection - interior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rainwater Collection - exterior	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Table 7: Construction Waste Management (GBP Form 3 criteria 5.3)**

Please list amount of construction waste that was directed to the following facilities:

\_\_\_\_\_ tonnes directed to Landfill

\_\_\_\_\_ tonnes directed to Recycling Facility

\_\_\_\_\_ tonnes salvaged

\_\_\_\_\_ tonnes directed to other (specify): \_\_\_\_\_

**Table 8: Energy Use, Water Use and GHG Tracking (GBP Form 3 criteria 6.3)**

Indicate commitment to track building energy use, water use & ghg emissions.	<input type="checkbox"/> Portfolio Manager account has been set-up
Please identify person responsible for administration of Portfolio Manager account:	NAME:
	EMAIL:

**Building Owner Acknowledgement (Check the boxes that apply and sign below):**

- I have reviewed the information in Tables 1-8 and deem them accurate to the best of my knowledge.
- Power Smart Acceptance Letter is attached.
- I will email Power Smart Designation letter upon receipt to GBCT - greenbuilding@gov.mb.ca.
- I am providing GBP Form 2 to the FUNDER within 60 days of occupancy.

NAME OF FUNDING BUILDING OWNER or FUNDING RECIPIENT (PRINT)

POSITION

SIGNATURE OF BUILDING OWNER OR FUNDING RECIPIENT

DATE (mm/yyyy)

PHONE:

EMAIL:

# GBP Form 4: Reporting for RESIDENTIAL BUILDINGS

## SECTION C1: *To be completed by the FUNDER (Project/Funding Officer)*

**INSTRUCTIONS:**

**GBP FORM 3 AND GBP FORM 4 ARE REQUIRED BY THE FUNDING AGREEMENT**

GRE organizations must:

- Confirm that the GBP criteria is incorporated into funded building projects
- Collect GBP Form 3 and GBP Form 4 within the appropriate timelines (see Section A: Instructions to Owner)

\_\_\_\_\_  
NAME OF PROJECT/FUNDING OFFICER

\_\_\_\_\_  
FUNDER (Department or Branch)

\_\_\_\_\_  
PHONE: (PROJECT/FUNDING OFFICER)

\_\_\_\_\_  
EMAIL:

\$ \_\_\_\_\_  
PROVINCIAL CONTRIBUTION

\_\_\_\_\_  
FILE NUMBER

\_\_\_\_\_  
DATE of FUNDING AGREEMENT (mm/yyyy)

\_\_\_\_\_  
SIGNATURE OF PROJECT/FUNDING OFFICER

\_\_\_\_\_  
DATE of FORM 4 RECEIVED (mm/yyyy)

## SECTION C2: *To be completed by the FUNDER's Green Building Program Liaison*

\_\_\_\_\_  
NAME OF LIAISON

\_\_\_\_\_  
DEPARTMENT

\_\_\_\_\_  
SIGNATURE OF LIAISON

\_\_\_\_\_  
DATE SUBMITTED TO GBCT (mm/yyyy)

## Section C3: *To be completed by Green Building Coordination Team (GBCT)*

\_\_\_\_\_  
NAME & SIGNATURE OF GBCT

\_\_\_\_\_  
DATE RECEIVED (mm/yyyy)