

LEED BC+C Multifamily Midrise Checklist

Minimum Project Requirements:

Multifamily residential buildings of 4+ stories above grade. The building must have 50% or more residential space.

Project: Ladies Golf

Last Revision: March 8, 2018

Integrative Process		Action By	Yes	Maybe	No
IPc1	Integrative Process -2 points				
	Option 1: Integrated Project Team (1 point), Option 2: Design Charrette (1point), Option 3: Trades Training (1point)		1		1
Location and Transportation		Action By	Yes	Maybe	No
LTp1	Floodplain Avoidance				
	Do not develop on a flood hazardous plain	Developer	Y		
Performance Path					
LTc1	LEED for Neighborhood Development Location - 15 points				
	Locate the project within a certified LEED ND neighbourhood.	Developer			
Prescriptive Path					
LTc2	Option 1 - Sensitive Land Protection - 4 points				
	Path 1: Previously developed (4 points), Path 2: Avoidance of sensitive land (3 points)	Developer	3		
LTc2	Option 2 - Infill Development - 2 points				
	Select a lot where at least 75% of the land within 1/2 mile from the project boundary is previously developed land. Water bodies/parks are excluded from calculation.	Developer	2		
LTc2	Option 3 - Open Space - 1 point				
	Select a location within 1/2 mile of a publically accessible open space that is at least 3/4 acre	Developer	1		
LTc2	Option 4 - Street Network - 1 point				
	Existing streets and sidewalks must create at least 90 intersections per square mile (35 intersections per square km)	Developer	1		
LTc2	Option 5 - Bicycle Network and Storage - 1 point				

	Bicycle network - 180m from a bicycle network. AND Bicycle storage - provide long term and short term bicycle storage	Developer			1
LTC3	Compact Development - 3 points				
	Dwelling unit/hectare of buildable land - >74 (1point), >136 (2 points), >198 (3points).	Developer	2		1
LTC4	Community Resources - 2 point				
	Walking distance from 4-7 "uses" (1point), 8-11 (1.5 points), >12 (2 points).	Developer	2		
LTC5	Access to Transit - 2 point				
	Locate the project within 1/4 mile walking distance of bus or street car stops and 1/2 mile walking distance of bus rapid transit stops.	Developer	2		

Sustainable Sites		Action By	Yes	Maybe	No
SSp1	Construction Activity Pollution Prevention				
	Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust	General Contractor	Y		
SSp2	No Invasive Plants				
	Introduce no invasive plant species into landscape	Landscape Architect	Y		
SSc1	Heat Island Reduction - 2 points				
	Option 1 - Shading, Option 2 - Nonabsorptive Materials. 50-75% nonabsorptive (1 point), >75% (2 points)	Landscape Architect	2		
SSc2	Rainwater Management - 3 points				
	Case 1: Low Impact Development. Install a green roof, maintain native planting areas, using permeable paving, and install a stormwater cistern. Points for permeable area as a percentage of total lot area - 50-64% (1 point), 65-79% (2points), >80% (3points)	Civil Engineer/Landscape Architect		3	
SSc3	Non-toxic Pest Control - 2 point				
	Introduce a non-toxic pest control measure and develop an integrated pest management policy that includes guidance for residents.	Landscape/Developer			2.0

Water Efficiency		Action By	Yes	Maybe	No
WEp1	Water Metering				
	Install either individual unit water meters or submeters for each unit.	Developer	Y		
Performance Path					
WEc1	Total Water Use - 12 points				
	Reduce demand for water for both indoor and outdoor water use reduction. Reduction 10% (1 point), 15% (2 points), 20% (3 points), 25% (4 points), 30% (5 points), 35% (6 points), 40% (7 points), 45% (8 points), 50% (9 points), 55% (10 points), 60% (11 points), 65% (12 points)	Developer			2
Prescriptive Path					
WEc2	Indoor Water Use Reduction - 6 points				
	Install the following fixtures; all must be WaterSense labelled or equivalent. Lavatory Faucet - rated average flow of 1.5GPM (1point), 1 GPM (2points). Showerhead - 1.75GPM (1point), 1.5GPM (2points). Toilet - average flush volume of 4.1/LPF (1point). Clothes washer must be ENERGY STAR certified or equivalent.	Developer	6		
WEc3	Outdoor Water Use Reduction - 4 points				
	Reduce the landscape area planted to turf grass by landscaping with plants that are native to the region. 60% turf + 25% native (1 point), 40% turf + 50% native (2 points), 20% turf and 75% native (3 points), 0.5% turf and 75% native (4 points).	Landscape Architect	3		1

Energy & Atmosphere		Action By	Yes	Maybe	No
EAp1	Minimum Energy Performance				
	5% improvement over ASHRAE 90.1-2010 Appendix G baseline and meet ASHRAE minimum conditions. Meeting commissioning requirements using ENERGY STAR protocols or prescriptive path	Energy Modeler/Commissioner		Y	
EAp2	Energy Metering				
	Install individual electric submeters for each residential unit. Gas submeters are not required for mid-rise, but is required for homes.	Developer	Y		
EAp3	Education of the Homeowner, Tenant or Building Manager				
	Provide an operations and maintenance manual to all individuals responsible for maintenance of the building. Conduct a 1 hour walkthrough of building	Developer/Commissioning	Y		
Performance Path					
EAc1	Annual Energy Use - 30 Points				
	Demonstrate a percentage improvement in the proposed building performance compared with the baseline ASHRAE 90.1-2010 +/- home size adjustment.	Energy Modeler		3	27
EAc2	Option 1 - Efficient Hot Water Distribution - Efficient Hot Water System - 5 points max - 2 points				
	Design a energy efficient hot water distribution system based on maximum pipe length requirements (path 1) or maximum pipe volume limits (path2) (2 points total)	Developer/Mechanical	1		
EAc2	Option 2 - Performance Test - Efficient Hot Water System - 3 points				
	Verify that no more than 0.5 gallons of water is stored in any piping between the hot water source and any fixture, and no more than 0.6 gallons of water is collected from hot water fixtures before hot water is delivered.	Developer/General Contractor			1
EAc2	Option 3 - Pipe Insulation - Efficient Hot Water System - 2 points				
	Install at least R-4 insulation on all domestic hot water piping, including subslab pipes. Run buried piping in slab or below grade through a protective waterproof raceway, channel, sleeve.	Developer/General Contractor			2
EAc3	Advanced Utility Tracking - 2 points				
	Option 1: Install an energy monitoring system that includes individual in-unit usage providing energy use monitoring at intervals of one hour or less. Option 2: Third party utility reporting. Share data of individual unit meters of whole building water meter with a utility tracking provider.	Developer	2		

Materials & Resources		Action By	Yes	Maybe	No
MRp1	Certified Tropical Wood				
	All wood must be reused, reclaimed or certified by FSC.	General contractor	Y		
MRp2	Durability Management				
	Mid-rise is exempt from this requirement				
MRC1	Durability Management Verification - 1 point				
	Have the verification team inspect and verify each measure listed in the ENERGY STAR for homes version 3, water management system builder checklist	General Contractor			1
MRC2	Environmentally Preferable Products -5 points				
	Option 1: Use local products for framing (0.5 points), aggregate for concrete and foundation (0.5 points) and drywall (0.5 points). Option 2: 90% of building components by weight or volume , must meet 25% post consumer and 50% preconsumer content	General Contractor	5		
MRC3	Construction Waste Management - 3 points				
	Reduce total construction waste from baseline waste 10% reduction construction waste below baseline - 0.5 point, 20% 1 point, 30% - 1.5 point, 40% - 2 points, 50% 2.5 points, 60%, 3.0 points	General Contractor	3		

Indoor Environmental Quality		Action By	Yes	Maybe	No
IEQp1	Ventilation				
	Install a whole unit ventilation system for each dwelling unit that complies with ASHRAE 62.2-2010 and all local exhaust requirements. For all non-unit spaces, meet minimum requirements for ASHRAE 62.1-2010.	Mechanical Engineer	Y		
IEQp2	Combustion Venting				
	Do not install any unvented combustion appliances. Install a CO monitor on each floor of each unit.	General Contractor	Y		
IEQp3	Garage Pollutant Protection				
	Place all air handling equipment and ductwork outside the fire rated envelope of the garage. Tightly seal shared surfaces between the garage and conditioned spaces.	General Contractor	Y		
IEQp4	Radon Resistant Construction				
	The requirements for radon protection are automatically satisfied if the building is elevated by at least 2 ft with open air space between the building and ground. A garage under a building is an acceptable alternative. For mixed use buildings, nonresidential space is exempted.	General Contractor		Y	
IEQp5	Air Filtering				
	Install air filters with MERV of 8 or higher. Install air filters with MERV of 6 or higher for outdoor air systems with 10ft of ductwork or more. Design ductwork and specify the central blower to account for the pressure drop across the filter.	General Contractor	Y		
IEQp6	Environmental Tobacco Smoke (ETS) Control				
	Prohibit smoking in all common areas of the building.	Developer	Y		
IEQp7	Compartmentalization				
	Weatherstrip all doors in residential units leading to common hallways. Weatherstrip all exterior doors and operable windows to minimize leakage from outdoors. Conduct a blower door test based on RESNET requirements or ENERGY STAR multifamily high rise program testing and verification protocols.	General Contractor		Y	

IEQc1	Enhanced Ventilation - 3 points				
	Option 1: Use one of the strategies to control the exhaust for insuite bathrooms. 1) an occupancy sensor 2) an automatic humidistat controller 3) continuously operating exhaust fan 4) delay timer that operates the fan for at least 20 minutes. Option 2: Whole house ventilation - all zones including non-residential spaces required to meet ASHRAE 62.2 requirements. Program the system such that it does not exceed the standards requirements by more than 10%	Mechanical Engineer	3		
IEQc2	Contaminant Control - 2 points				
	Option 1 - Pedimats (.5points), Option 2 - Shoe removal and storage (.5 points), Option 3 - Preoccupancy flush (.5 points), Option 4 - Air testing (1 point)	General Contractor	1		1
IEQc3	Forced-Air Systems - Balancing of Heating and Cooling Distribution System - 3 points				
	Option 1: Multifamily buildings with an average unit size less than 1200 sqft automatically meet requirements (1point). Option 2 - Supply airflow testing - Supply air flow must be tested by a qualified energy rated to be within +/-20% of calculated values from ACCA manual J. (1point). Option 3 - Pressure balancing - Testing to demonstrate a pressure difference of more than 3 PA. (1 point)	General Contractor	1		2
IEQc3	Radiative Systems - Balancing of Heating and Cooling Distribution System - 2 points				
		General Contractor			
IEQc4	Enhanced Compartmentalization - 3 points				
	Perform a compartmentalization blower door test according to RESNET or ENERGYSTAR testing protocols. With an allowable maximum leakage of 0.15cfm50 per square foot of enclosure.	General Contractor			3
IEQc5	Enhanced Combustion Venting - 2 points				
	Option 1: Do not install any fireplaces or woodstoves (2 points)	Architect		2	
IEQc6	Enhanced Garage Pollutant Protection - 1 point				
	Following ASHRAE 62.1-2010 exhaust requirements for garage. Provide self closing doors and deck to deck partitions or a hard lid ceiling.	Mechanical Engineer			1
IEQc7	Low-Emitting Products - 3 points				
	(1) Meet emissions and VOC requirements for the following categories: interior paints & coatings, interior adhesives & sealants, flooring, composite wood, ceilings & walls & thermal & acoustic insulation. 2 categories met - 1 point 4 categories met - 2 points 5 categories met - 3 points	General Contractor	3		
IEQc8	No Environmental Tobacco Smoke - 1 point				
	Prohibit smoking throughout the building, including living units	Developer	1		

Innovation & Design Process		Action By	Yes	Maybe	No
IDp1	Preliminary Rating				
	Conduct a preliminary LEED meeting.	LEED	P		
IDc1	Innovation - Enhanced Commissioning				
	roles and responsibilities; measurement requirements (meters, points, metering systems, data access); the points to be tracked, with frequency and duration for trend monitoring; the limits of acceptable values for tracked points and metered values (where appropriate, predictive algorithms may be used to compare ideal values with actual values); the elements used to evaluate performance, including conflict between systems, out-of-sequence operation of systems components, and energy and water usage profiles; an action plan for identifying and correcting operational errors and deficiencies; training to prevent errors; planning for repairs needed to maintain performance; and the frequency of analyses in the first year of occupancy (at least quarterly).	LEED		1	
IDc1	Innovation - EV Charging				
	2% EV charging stations and 5% EV preferred parking spaces	LEED		1	
IDc1	Innovation - Occupant building comfort survey				
	Conduct a study with 30% of residents to confirm building comfort. 20% should be satisfied. If not, implement corrective actions	LEED	1		
IDc1	Innovation - Design for active occupants				
		LEED	1		
IDc1	Exemplary Performance - TBD				
		LEED	1		
IDc2	LEED AP for Homes				
	Include team member with LEED AP for Homes	LEED	1		
Regional Priority		Action By	Yes	Maybe	No
RPc1	Regional Priority - 4 points				
	Identify credits which have a higher regional priority for an additional point. Base credit must be met.		4		
Cumulative Total			49	58	104

Certified 40-49 points **Silver** 50-59 points **Gold** 60-79 points **Platinum** 80+ points