

Instructions for Worksheet

1. Developments working toward a 2-Star Rating for a PUD agreement must accomplish purple cells.

#REF!

Refer to Multifamily Guidebook for additional details on each requirement.
 If printing, please print only this Worksheet. Best if printed at <60% normal size.

			Austin Energy Multifami	ly G	reen B	uildir	ng Ra	ting	2009			
	Category	Requirements (Residential Uses)	Requirements (Non-Residential Uses)	Web Link	Max Points	De Yes	sign Te ?	am No	AE √'d	GB Final	Strategies / Comments	Team Member
	Basic Requiremen	, ,	(103	•	No	, u	T mai		monibol
1	Current Regulations	Meet current City of Austin Codes with local am mechanical, plumbing, electrical, and current dr in project watershed).			Req'd							
2	Transportation Alternatives - Bicycle Use	Provide covered bicycle parking for 15% of resi and provide a safe path from property entrance			Req'd							
3	Building Envelope Design	 A. BUILDINGS 4-6 STORIES ABOVE GRADE Exceed the current Austin Energy Code's Build demonstrated via COMcheck or use a building building exceeds ASHRAE 90.1-2004 by 15%. B. RESIDENTIAL BUILDINGS 3 STORIES OF Meet one of the following Options: 1. Exceed the current Austin Energy Code's Buildemonstrated via REScheck. 2. SHGC on all glazing does not exceed 0.30 a 3. All vertical fenestration on west, south, & eas have a projection factor of not less than 0.5 and building can be rotated up to 45 degrees to the 	ng Envelope requirement by 15% performance model to demonstrate that the energycodes.gov/comcheck/ R LESS ABOVE GRADE: ilding Envelope requirement by 15% nd U-factor does not exceed 0.4 t* is shaded by permanent projections that that will last as long as the building ("The		Req'd							
4	Residential Mechanical Systems	Systems meet ALL of the following requirements: 1. Dwellings served by split or individual systems sized according to the ACCA (Air Conditioning Contractors Association) Manual J Residential Load Calculation Procedure and installed according to AHR (Air-Conditioning, matched according to AHR (Air-Conditioning, Heating & Refrigeration Institute)			Req'd							
5	High Efficacy Lighting	Dwellings: at least 50% of all indoor lamps in high use areas are Energy Star-compliant high efficacy lamps OR install 3 Energy Star fixtures in high use area. High use area include kitchen, dining room, living room, family room, bedroom, bathroom and halls/stairways. Common spaces: at least 25% of all indoor lamps are Energy Star-compliant high efficacy	Exceed current City of Austin Lighting requirements by 15% each or exceed building performance model by 15%.		Req'd							
6	Testing / Building System Commissioning (Cx)	Develop and implement a plan that achieves ALL of the following tests": 1. Visual inspection of mechanical rough-ins: 100% of dwellings 2. Duct leakage testing: 25% of dwellings w/ less than 10% leakage 3. Air balancing: 25% of dwellings ('For split systems only;' if other cooling technology is used the project must meet Non- residential Uses Cx Requirements). See Guidebook for more information.	Commission Mechanical and Electrical systems: • Cx Specification included in construction documents, including air-side testing as per residential requirements • (OPR) Owners Project Requirements and (BOD) Basis of Design documents • Cx Plan (prior to construction) • Installation verification • Cx report		Req'd							
7	Building Water Use Reduction - Metering	Site meets BOTH of the following measures: 1. All dwellings are individual metered or submetered 2. All dwellings are billed individually for water usage			Req'd							

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	Category	(Residential Uses)	(Non-Residential Uses)	Link	Points	Yes	?	No	√ 'd	Final	Strategies / Comments	Member
8	Building Water Use Reduction	A. PRESCRIPTIVE OPTION: Each dwelling includes ALL of the following: 1.Lavatory fixtures (max. 1.0 gpm) 2. Showerheads (max. 2.0 gpm) (no more than one showerhead installed per shower) 3. Kitchen fixtures (max. 2.2 gpm) 4. Either no clothes washer is installed in each unit OR washer uses fewer than 28 gal/cycle B. PERFORMANCE OPTION: Reduce planned indoor potable water consumption below baseline by at least 15% (ASME/ANSI Standards and City of Austin Ordinance No. 20071018-086 Section	Reduce indoor potable water consumption below the baseline by at least 15% (see Performance Option B to the left).		Req'd							
9	Irrigation Water Reduction	Site meets ALL of the following requirements: 1. 90% of new plants on COA Grow Green list 2. Plant-based mulch covers all non-turf plantir 3. Install a minimum of 6 inches of soil below a	g beds to a minimum 4-inch depth.		Req'd							
10	Low VOC Interior Paints and Coatings	All paints, primers, and anti-corrosive coatings not exceed the VOC limit of Green Seal Enviro applied on-site to building interior must not exc 1113. greenesal.org/certification/standards/pai aqmd.gov/rules/reg/reg11/r1113.pdf	amental Standard GS-11. All coatings and the current VOC limit of SCAQMD Rule		Req'd							
11	Filtration for Indoor Air Quality	Filters installed in ventilation systems shall hav (MERV) rating of 7 or greater.	e a minimum efficiency reporting value		Req'd							
12	Moisture Prevention	Site meets ALL of the following requirements: 1. No vinyl wall coverings or vapor barriers for wall (also include in tenant agreements.) 2. Install building envelope drainage plane syst systems. 3. For buildings with mechanical ventilation system building with be presented.	ems, including flashing and overhang		Req'd							
13	Storage and Collection of Recyclables	Provide an easily accessible, well-marked area dedicated to the separation, collection and stor of four materials must be recycled. Building lou sized appropriately to handle the volume recyc occupants.	age of materials for recycling. A minimum ading dock or pick-up location(s) must be		Req'd							
14	Construction Waste Management	Recycle and/or salvage at least 50% (by weigh demolition waste, excluding excavated soil and			Req'd							
	Basic Requirements NOT	ACHIEVED				0	0	0	0	0		

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	Calegory	(Residential Uses)	(Non-Residential Uses)	Link	Points	Yes	?	No	√ 'd	Final	Strategies / Comments	Member
	Site											
1a	Site Selection - Environmental Sensitivity	Site meets BOTH of the following requirements: 1. Not located in the Drinking Water Protected 2 2. Not a Greenfield			2							
1b	Site Selection - Desired Development Area	Site is located within the Urban Watershed Des	ired Development Zone		4							
2	Brownfield Redevelopment	Project demonstrates effective remediation of s technologies that have minimal disruption on th ground.			1							
3	Site Characteristics Study	Map the proposed site's environmental charact • Existing water elements • Soil conditions • Ecosystems and natural habitats • Slope • Trees and other vegetation • Seasonal wind and daylight availability • Traffic and other pollution sources Create a plan to minimize disturbance and main Develop recommendations for building placeme environment and to take advantage of site char	ntain or restore existing site features. Int on site to minimize impact on the		1							
4a	Transportation Alternatives - Public Transportation	Main building entrance is located within 1/4 mile bus lines or within 1/2 mile of a rail stop (or futu 5 years).			1							
4b	Transportation Alternatives - Parking Capacity	Parking does not exceed minimum local zoning	requirements.		1							
5	Site Disturbance	 On sites not previously developed (Greenfie building perimeter; 10 ft beyond walkways, patit & utility trenches; 25 feet beyond any pervious. On previously developed sites, at least 50% area minus building footprint) is vegetated usin areas may be included in open area calculation native/adapted. 	bs, surface parking; 15 ft beyond roadways areas that require additional staging. of the post-development open area (site g native/adapted plants. Vegetated roof		1							
6	Heat Island Reduction	Site meets ONE of the following: 1. Vegetated open-grid pavement system (at le structured parking area 2. Locate 50% of parking underground or in str 3. High albedo paving materials on at least 30% 4. Vegetative shading of at least 30% of non-ro	uctured parking. % of non-roof impervious surfaces		1							
7	Light Pollution Reduction	Exterior lighting meets COA Code-Chpt.25-2, E Illuminance levels at Specific Facilities	, Art. 2.5; IESNA RP-33 Light Trespass; and		1							
8	Accessibility	Site meets BOTH of the following: 1. 100% of units are either adaptable or visitable. 2. Door handle levers installed on 100% of units			1							
9	Outdoor Environmental Quality	Provide shaded, outdoor seating that is access more of the building's occupants.	ble to all building occupants for 10% or		1							
10	Integrated Pest Management (IPM)	Develop and implement and IPM plan to minimitorial to a minimitorial toxic practices for site and building management			1							
	Total Points - Site				16	0	0	0	0	0		

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_		(Residential Uses)	(Non-Residential Uses)	Link	Points	Yes	?	No	√ 'd	Final	g	Member
	Energy		building build 7.50(and building only a sha					1	1	1		
1	Energy Efficient Building - PERFORMANCE OPTION	Buildings 4-6 stories must exceed current code ASHRAE 90.1-2004 App. G Performance Ratir stories and less may use Energy Gauge USA t Point Allocation: 17.5% = 1 pt, 20% = 2 pts, 22 30% = 6 pts, 32.5% = 7 pts, 35% = 8 pts, 37.5% 45% = 12 pts.	g Method. Residential buildings three o demonstrate above the code savings. 2.5% = 3 pts, 25% = 4 pts, 27.5% = 5pts,		12							
		Include 1 item from Roofing, 2 items from duct demonstrate with Manual J calculations (min. 6	vork and 1 item from envelope and 00 sq ft/ton)		1							
2a	Energy Efficient Building - PRESCRIPTIVE OPTION	Include 2 items from Roofing, 3 items from due demonstrate with Manual J calculations (min 6			1							
		Include 3 items from Roofing, 4 items from due demonstrate with Manual J calculations (min 7			1							
		 Roofing Flat or low-slope (2:12 or less): Flat or low-slope (2:12 or less): Roofing product > 75% reflective for > 90% or Raised heal roof truss allows for a minimum sealed attic Insulation - minimum of R32 Green/vegetated roof 50% minimum Steep Slope (greater than 2:12): Building is 3 stories or fewer above grade & F Roofing product > 45% reflective for > 90% or Raised heal roof truss allows for a minimum sealed attic Insulation - minimum of R32 Roofing product > 45% reflective for > 90% or Emissivity > 90% Raised heal roof truss allows for a minimum sealed attic Insulation - minimum R32 Radiant barrier system installed next to air sp Ductwork Located within the thermal envelope Ducts are cut to exact length, original diameter single duct greater than 180° and no single tur Duct systems are sized according to Manual Supply and return ductwork insulation outside Bedrooms have dedicated return air duct OR Maximum length of any flex duct take-off is 1: Envelope Total fill' insulation in exterior walls (e.g. wet cementitious foam) East and west glazing is less than 10% of fag: Use airtight building systems such as structur concrete form (ICF) All south windows are shaded with overhange shaded at 10 AM and 3 PM on September 21 										
2b	Energy Efficient Building - PRESCRIPTIVE OPTION (Equipment/Appliances - Cooling Equipment Efficiency)				1							
2c	Energy Efficient Building - PRESCRIPTIVE OPTION (Equipment/Appliances - Water Heaters)	Water heater meets at least ONE of the followin 1. Gas - minimum Energy Factor (EF): 0.63 (< 2. Gas tankless 3. Solar thermal 4. Gas boilers are Energy Star labeled			1							
2d	Energy Efficient Building - PRESCRIPTIVE OPTION (Equipment/Appliances - Gas Furnaces)	Gas furnaces are Energy Star labeled. If gas i labeled.	s not available, heat pump is Energy Star		1							
2e	Energy Efficient Building - PRESCRIPTIVE OPTION (Equipment/Appliances - Ceiling Fans)	Ceiling fans installed in all main rooms and be rooms/kitchens) AND fans are Energy Star labe			1							
			a. 75% of all indoor lamps are Energy Star- compliant high efficacy lamps		1							

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2f	Energy Efficient Building - PRESCRIPTIVE OPTION (Lighting)		b. 100% of all indoor lamps are Energy Star- compliant high efficacy lamps	-	1							
			c. 100% of all indoor fixtures are Energy Star-compliant		1							
3		10-year GreenChoice® commercial agreement GreenChoice® subscriptions unavailable, 2-ye National RECs for 100% of building's annual el	ar contract for Texas or Green-e certified		1							
		a. 10 kW min. OR generate 25% of annual kW		1								
		b. 15 kW min. OR generate 50% of annual kWI	n usage (dwelling units excluded).		1							
4	On-Ste Renewable Energy	c. 20 kW min. OR generate 75% of annual kWł	n usage (dwelling units excluded).		1							
		d. >20 kW OR generate >90% of annual kWh u			1							
		Exception: Properties with insufficient roof spa						4				
5	Additional Building Systems Commissioning (Cx)	 Commisioning (Cx) agent design review prio 2 Cx specification included in construction dox Provide Owner's Project Requirements (OPF Demonstrate that the mechanical and electri OPR. Demonstrate building structure & envelope p Provide seasonal recommissioning throughc Submit a final commissioning report 	cuments k), Basis of Design (BOD), and Cx Plan cal systems operate in accordance with the performance in accordance with OPR		1							
6	District Cooling	Tie into Austin's district cooling loop for all HVA	AC energy needs.		1							
		Refrigerators			1				1			
7a	Equipment/Appliances - Energy Star Labeled	Dish Washers*			1				1			
	Energy of a Eabeled	Clothes Washers*			1							
		* Must also be listed on COA Water Conservat										
7b	Equipment/Appliances - Central Laundry	Central laundry site participates in COA Water for coin-operated equipment AND equipment is			1							
		a. 75% of all indoor lamps in high use areas are Energy Star-compliant high efficacy lamps.			1							
		b. 100% of all indoor lamps in high use areas are Energy Star-compliant high efficacy lamps.										
8		c. 100% of all indoor fixtures in high use areas are Energy Star-compliant.		1								
		d. Common space exterior lighting is controlled by automatic daylight controls or controlled by an astronomical time switch in series with a photo sensor.			1							
	Total Points - Energy				25	0	0	0	0	0		

	0-1	Category (Requirements Requirements (New Desidential View) (New Desidential View)		Web	Max	De	sign Te	am	AE	GB		Team
	Category	(Residential Uses)	(Non-Residential Uses)	Link	Points	Yes	?	No	√ 'd	Final	Strategies / Comments	Member
	Water											
		a. Reduce outdoor potable water usage by 50% not include plants listed on COA Grow Green "I			1							
	Outdoor Potable Water	b. Reduce outdoor potable water usage by 75% not include plants listed on COA Grow Green "I	of total water required for irrigation and do avasive Plants to Avoid"		1							
	Use Reduction	c. Reduce outdoor potable water usage by 100 th not include plants listed on COA Grow Green "I	nvasive Plants to Avoid"		1							
		Note: Based on landscaped area, vegetation specie density factor (low, medium high), microclimate fact (drip, sprinkler, other) efficiency					_		-			
	Indoor Potable Water Use	a. Reduce planned indoor potable water usage	by 20% over baseline.		1							
2	Reduction	b. Reduce planned indoor potable water usage	by 25% over baseline.		1							
		c. Reduce planned indoor potable water usage	by 35% over baseline.		1							
3	Central laundry	The development does not include clothes was	ner hook-ups in dwellings.		1							
	Total Points - Water				7	0	0	0	0	0		I
	Indoor Environme	ntal Quality (IEQ)		_				-				r
1	Indoor Air Quality Monitoring		Install permanent carbon dioxide monitoring system interlocked with the ventilation system that provides feedback in a useable form to make adjustments for ventilation system. Commission all systems to the preferred parameters and optimal performance for all operating conditions.		1							
2	Indoor Chemical & Pollutant Sources	I. Identify and isolate pollutant point sources any shops, janitors closets and labs. Z. Provide ventilation directly to the outside of the appropriate disposal. Construct a full height deck to deck partition these areas and occupied spaces. 4. Operate at negative pressure relative to sume conditions. Note: Dwelling units are excluded.	ne building and provide drains for or a hard lid ceiling enclosure between		1							
3	Daylighting	Provide adequate daylighting and integrate day systems and controls. Dwelling units are exclu			1							
4	Views to Outside	Glazing systems and interior partitions allow for spaces a view of vision glazing (between 2'-6" a the outdoors.	and 7'-6" above finish floor) and a view of		1							
5	Thermal Comfort	Install mechanical systems (thermal, ventilation system so ensure optimal parameter for therma according to ASHRAE 55-2004.			1							
6a	Low-Emitting Materials - Sealants and Adhesives	All interior installed sealants and adhesives me District (SCAQMD) Rule 1168. For spray adhes Commercial Adhesives GS-36. www.aqmd.go	sives, meet the Green Seal standard for		1							
6b	Low-Emitting Materials - Flooring	All installed flooring systems meet the requirem the following: 1. All installed carpets meet Carpet & Rug Insti standards 2. All installed carpet pads meet CRI Green Lal 3. All resilient flooring products, including linole ceramic flooring, wall base and rubber flooring, Note: If all finish flooring is concrete this credit	ute's (CRI) Green Label Plus minimum el minimum standards um, laminate flooring, wood flooring, must be FloorScore certified.		1							
6c	Low-Emitting Materials - Composite Wood and Agrifiber Products	All composite wood and agrifiber products used inside of the weatherproofing system) contains			1							
6d	Low-Emitting Materials - Insulation	All installed insulation (excluding piping) contai	ns no added urea-formaldehyde resins.		1							

	0-1	Requirements	Requirements	Web	Max	De	sign Tea	am	AE	GB		Team
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7	Humidity Control	Humidity is controlled by BOTH of the following measures: 1. Exhaust fans vented to outside for at least 50% of all dwellings in all of the following locations: • above cooktop/stove • any room with tub or shower 2. Bathroom (with shower or tub) fan connected to timer or humidistat.			1							
8	Acoustic Quality	Ensure acoustic quality through ALL of the follo 1. Define appropriate background sound levels, intelligibility, & sound isolation. Identify spaces potential problems. 2. Mechanical & duct systems designed to mee Applications Design Guidelines for HVAC Sound 3. Appropriate vibration isolation for mounted e 4. Select non-'tonal' equipment. 5. Specify surface finishes and/or masking syst intelligibility & privacy. 6. Specify partitions, ceilings, floor/ceiling asse provide adequate sound isolation between spac 7. Mitigate intermittent noise sources, e.g. footf	reverberation decay times, speech where impact noises are likely & address t guideline RC,NC or NCB of ASHRAE d & Vibration Control Chpt. aujment. ems to provide appropriate sound mblies, building layouts, & vestibules to res.		1							
9	Outdoor Pollutant Sources	Minimize outdoor pollutant sources by ALL of th 1. Entrances, operable windows, and fresh air in smoking areas. 2. Install signage designating smoking and no- 3. For main building entry, install entryway syste primary direction of travel. 4. Specify effective filters for intake, return, and	ntakes located at least 30 ft from designated smoking areas. sms (grills, grates, mats) at least 6 ft long in		1							
10	Construction Indoor Air Quality	Implement SMACNA Guidelines for Occupied E plan. Plan should include key areas of IAQ pro Protection, Pathway Interruption and Housekee or installed) from moisture damage. For perma construction, use MERV 8 (min.) filters in each prior to occupancy.	tection: Scheduling, Source Control, HVAC ping. Protect absorptive materials (stored nently installed air handlers used during		1							
	Total Points - Indoor Envi	ronmental Quality (IEQ)			13	0	0	0	0	0		
	Materials & Resou	rces							-			
1	Additional Construction Waste Management	Recycle and/or salvage at least 75% (by weight and land clearing debris, excluding soils and st			1							
2a	Building Reuse - Envelope and Structure	a. Incorporate at least 40% (surface area) of ex	isting building envelope and structure.		1							
		b. Incorporate at least 80% (surface area) of ex	isting building envelope and structure.		1							
2b	Building Reuse - Interior Non-structural Elements	Incorporate at least 50% (surface area) of interi			1							
3	Exterior Wall Material	Exterior walls (minimu of 50% of surface area) a frame construction (e.g. SIPS, ICF, AAC, etc.)			1							
4	Durable Floor Materials	Floor is durable material (e.g. concrete, stone, l 75% of all flooring.	prick, wood, ceramic tile) for minimum of		1							
5	Interior and Exterior Materials - PERFORMANCE OPTIONS	Use the appropriate calculator to achieve the fo										
		Salvaged materials used for minimum value of										
5a	Salvaged materials	1. Use salvaged or refurbished materials for 5			1							
L		2. Use salvaged or refurbished materials for 1 Recycled content materials used for a minimum		d Cont	1 ent = (sum	of 100%	post-co	nsumer +	50% po	st-		
5b	Recycled content	industrial) 1. Recycle Content materials used for 10% (\$			1	0. 100 //	2001 001		5070 p0	<i>.</i> .		
		2. Recycle Content materials used for 20% (\$	value) of project building materials.		1							

	0-1	R	equirements				equirements W			De	esign Te	am	AE	GB	Stratogies / Commente	Team
	Category		sidential Use	-	-	n-Residentia		Link	Points	Yes	?	No	√ 'd	Final	Strategies / Comments	Member
		Texas Sourced m				tracted or ma	nufactured region	ally wit	hin the sta	te of Tex	as for a	minimum	n value o	f the		
5c	Texas sourced materials	project building m								1	1	1	r	r		
		1. Texas source							1							
		2. Texas source							1							
5d	Certified wood	Use Certified Woo	od (FSC) for a	it least 50% (\$ v	alue) of all wo	od-based ma	terials.		1							
5e		Meet Green Seal SCAQMD Rule 11 sealants applied o	13 for all othe	er coatings, and	SCAQMD Ru	le 1168 for all			1							
6	Interior and Exterior Materials - PRESCRIPTIVE OPTIONS	Achieve at least 1	attribute per	material listed b	elow											
		Material Recycled Rapidly Texas FSC Certified Antitragree All cabinetry														
		All cabinetry							0.5							
		All doors All trim/molding							0.5							
		All trim/molding							0.5							-
		All flooring							0.5							
		All insulation							0.5							
	Total Points - Materials								15	0	0	0	0	0		
1	nnovation															
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
-									0	0	0	0	0	0		
	Total Points - Innovation								0	0	U	v	v	Ū		

Note: Basic requirements = 1 star; 29-35 pts. = 2 stars; 36-42 pts. = 3 stars; 43-56 pts. = 4 stars; 57+ pts. = 5 stars