

Appendix K
Class 2 Buildings, Blank Forms

Class 2 Building Project Notification Form

Agency:		Date submitted:																									
Contact person:	E-mail:	Phone:																									
Division or user:		ODOE Project ID #:																									
Project name:																											
Project address:																											
City:		ZIP:																									
Project Description:																											
Energy systems affected:																											
Area and Use Information: Project type: ☐ N = New construction R = Renovation Total floor area (sq.ft.) gross heated or cooled Affected floor area (sq.ft.) full area if new, or renovated area Construction cost \$ total budget, not appropriated amount Breakdown area by use and schedule; show design occupancy <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;">Area breakdown</th> <th style="text-align: center;">Use code</th> <th style="text-align: center;">Number of occupants</th> <th style="text-align: center;">Hours/day</th> <th style="text-align: center;">Occupied Days/week</th> <th style="text-align: center;">Weeks/Year</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> </tr> <tr> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> </tr> <tr> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> <td style="border: 1px solid black; height: 25px;"></td> </tr> </tbody> </table>				Area breakdown	Use code	Number of occupants	Hours/day	Occupied Days/week	Weeks/Year																		
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Use Codes: A = Food/cafeteria, gym/pool/lockers, library/archives, theater/arena B = Computer center, education, laboratory, office I = Clinic, hospital, jail/prison M = shop/retail R = Residential/dorm S = Warehouse																											
Estimated schedule: <table style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 30%; text-align: center;">Month/Day/Year</th> <th style="width: 30%;"></th> <th style="width: 30%; text-align: center;">Month/Day/Year</th> </tr> </thead> <tbody> <tr> <td>RFP for design services:</td> <td style="border: 1px solid black; height: 25px;"></td> <td>Bid date:</td> <td style="border: 1px solid black; height: 25px;"></td> </tr> <tr> <td>Schematic design begins:</td> <td style="border: 1px solid black; height: 25px;"></td> <td>Construction begins:</td> <td style="border: 1px solid black; height: 25px;"></td> </tr> <tr> <td>Design development begins:</td> <td style="border: 1px solid black; height: 25px;"></td> <td>Construction complete:</td> <td style="border: 1px solid black; height: 25px;"></td> </tr> <tr> <td>Design development complete:</td> <td style="border: 1px solid black; height: 25px;"></td> <td></td> <td></td> </tr> </tbody> </table>					Month/Day/Year		Month/Day/Year	RFP for design services:		Bid date:		Schematic design begins:		Construction begins:		Design development begins:		Construction complete:		Design development complete:							
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Design development begins:		Construction complete:																									
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E100 Envelope					
Status Code					
B	A	N/A	ECM#	Potential ECMs	ECM Description
			E110	Reduce Heat Losses	
			E111	Ceiling/roof insulation	
			E112	Wall insulation	
			E113	Floor/slab insulation	
			E114	Fan penthouse insulation	
			E115	Windows:	
			A	Thermal break in metal window frames	
			B	Wood, vinyl, or fiberglass window frames	
			C	Argon gas-filled glazing panels	
			D	High-performance low-e (e = 0.05) coating	
			E	Tinted glazing or reflective coatings	
			E120	Reduce Heat Gain	
			E121	Architectural shading and overhangs	
			E122	Window sizing and orientation	
			E123	Cool roof, green roof	
			E130	Reduce Infiltration	
			E131	Seal openings at penetrations of building envelope	
			E132	Air-lock vestibule or revolving doors	
			E190	Other Envelope Measures	

Status Code			ECM#	Potential ECMs	
B	A	N/A	ECM#	Potential ECMs	
			L111	Optimize fixture layout, spacing & orientation	
			L112 R	Delamp overlit areas	
			L113	Efficient Fixture Selection, (fixture CU)	
			L114	Optimize Ballast Selection	
			L115	Efficient Lamp Selection	
			A	Compact fluorescents in place of incandescents	
			B	Incandescent IR Halogen vs standard PAR lamps	
			C	Ceramic Metal Halide vs standard PAR lamps	
			D	High-output linear fluorescents in place of HID fixtures	
			E	Pulse Start Metal Halides vs standard Metal Halides	
			F	LED technology, exit signs and other applications	
			L116	Exterior LPD at or below ASHRAE-90.1-2004	
			L120	Lighting Controls	
			L121	Occupancy sensors (exceeding code requirements)	
			L122	Selective switching, (control of multiple lamps within fixture)	
			L123	Egress lighting scheduled off during unoccupied periods	
			L124	Exterior lighting controls (exterior lights extinguished after occupied period (i.e. 9PM - 5AM))	
			L130	Optimize Daylighting	
			L131	Continuous dimming controls	
			L132	On/off daylighting control	
			L133	Separate circuits for zoning flexibility in daylit zones	

Status Code					
B	A	N/A	ECM#	Potential ECMs	
			W111	Install return-line aquastat (not required by code)	
			W121	90%-plus condensing hot water heaters	
			W122	Summer water heater or small boiler	
			W123	Preheat DHW with reclaimed waste heat (i.e. chiller condenser, direct-contact boiler stack economizer, 24/7 computer server room AC unit)	
			W124	Solar-assisted water heater	
			W125	Heat pump water heater	
			W130	Process Related DHW Use	
			W131	Institutional laundry water reuse system	
			W132	Horizontal axis washing machines	
			W140	Heat Recovery	
			W141	Waste water heat recovery, i.e.GFX system	
			W190	Other DHW Measures	
F100 HVAC - Unitary Equipment					

Status Code					
B	A	N/A	ECM#	Potential ECMs	
			F110	Unitary Equipment	
			F111	Condensing furnaces	
			F112	Cooling-unit efficiency	
			F113	Air-to air heat pump efficiency	
			F114	Water-source heat pump	
			F115	Radiant heating	
			F116	Other HVAC general/unitary measures	
A100 HVAC - Air Distribution					
Status Code					
B	A	N/A	ECM#	Potential ECMs	
			A110	Reduce Airflow Rates	
			A111	Variable airflow with VFD	
			A112	Cold air distribution	
			A120	Reduce Fan Pressure Resistance	
			A121	Minimize fan unit static pressure-losses: air filters, cooling and heating coils, enlarge cabinet size.	
			A122	Minimize duct static pressure-losses: enlarging ducting & optimize fittings	
			A130	Reduce Ventilation Loads	
			A131	Separate make-up air units for high-ventilation areas	
			A132	Heat recovery (air-to- air, run-around loop, heat wheel)	
			A140	Reduce Air Leaks and Heat Losses	
			A141	Install low-leakage dampers	

			A150	Fan Systems and Delivery Systems	
			A151	Specify efficient fans and select efficient size fan wheel	
			A152	Separate HVAC units for perimeter and core zones	
			A153 R	Change constant air-volume reheat to VAV reheat	
			A154 R	Change multi-zone or dual duct to VAV	
			A155	Parallel fan power VAV boxes to reduce perimeter zone reheat	
			A190	Other HVAC - Air Distribution ECMs	
D100 HVAC - Steam and Water Distribution					
Status Code					
B	A	N/A	ECM#	Potential ECMs	
			D110	Reduce Energy Losses	
			D111	Steam trap monitoring and repair program	
			D112	Insulate piping and valve bodies	
			D120	Reduce System Flow and Pressure Resistance	
			D121	Variable primary pumping with VFD	
			D122	Increase cooling coil temperature difference	
			D123	Increase Heating coil temperature difference	
			D124	Reduce pump head pressure	
			D190	Other Steam or Water Distribution System	
T100 HVAC Controls					
Status Code					
B	A	N/A	ECM#	Potential ECMs	

			T111	Airflow and temperature setback in unoccupied areas through occupancy sensors or schedules	
			T112	Variable ventilation based on CO ₂ control	
			T113	Night-flush cooling cycle	
			T120	Water Side Control Strategy	
			T121	Time clock and OSA lockout control of heating and cooling pumps	
			T130	Misc. Controls	
			T131	Isolate large sheddable loads and install automated controls to limit electrical demand	
			T190	Other HVAC Controls	
C100 Cooling Plant					
Status Code					
B	A	N/A	ECM#	Potential ECMs	
			C110	More Efficient Cooling Equipment	
			C111	Select efficient kW/ton chillers: 1) centrifugal, 2) screw, 3) reciprocating	
			C112	Select chiller size(s) for efficient sequencing	
			C113	Optimization of chiller sequencing controls	
			C114	Central Heat Pump	
			C120	Alternate Cooling	
			C121	Water-side free cooling: cooling tower and P&F heat exchanger	
			C122	Heat recovery chiller	

			C131	Specify more efficient cooling tower to reduce LWT	
			C132	Water-cooled versus air cooled	
			C133	Evaporative-cooled versus air cooled	
			C134	Condenser water reset controls	
Status Code					
B	A	N/A	ECM#	Potential ECMs	
			H111	Specify efficient boilers	
			H112	Select boiler size(s) for efficient sequencing	
			H113	Optimization of boiler sequencing controls	
			H114	Modulating burner control, specify high turn-down ratio (>5:1)	
			H115	Improve draft controls: turbulators, barometric dampers	
			H116 R	Improve combustion by reducing excess air with O2 trim controls	
			H117	Boiler flue heat recovery to preheat combustion air or feed water	
			H118R	Recover heat from boiler blow-down	
			H120	Alternate Heating Systems	
			H121	Condensing hydronic boiler, design at lower supply/return water temp. i.e 140 F supply and 110 F return water temp.	
			H122	Water-source or ground-source heat pumps	
			H190	Other Heating Plant Measures	

K100 Hood and Make-up Systems for Kitchens, Labs, Shops, Process Equipment, etc.					
Status Code					
B	A	N/A	ECM#	Potential ECMs	
			K111	Minimize exhaust hood airflows, i.e. low flow hoods	
			K112	Minimize exhaust hood run time	
			K113	Separate make-up air unit set at lower temperature	
			K190	Other Hood and Make-up Systems	
S100 Swimming Pools					
Status Code					
B	A	N/A	ECM#	Potential ECMs	
			S111	Elevate air temperature to reduce pool evaporation rates	
			S112	Air-to-air heat recovery of ventilation air	
			S113	De-humidification heat recovery	
			S114	Variable ventilation based on advanced climate controls sensing humidity, indoor/outdoor/dew-point temperatures	
			S115	Lower ventilation rates during unoccupied hours	
			S116	Low pressure-drop pool water filters/strainers	
			S117	Two-speed circulation/filtration pumping (occupied/unoccupied modes)	
			S190	Other Swimming Pool Measures	
P100 Power/Electrical Distribution					
Status Code					
B	A	NA	ECM#	Potential ECMs	

			P111	In excess of code (Consortium for Energy Efficiency) i.e.fans, pumps, etc.	
			P120	Vertical Transport	
			P121	Hydraulic elevator pump/motor efficiency opportunities	
			P122	Traction Elevator	
			P130	Server and Telecom Rooms	
			P131	Multiple small compressors for efficiency and redundancy	
			P132	Air side economizer cooling	
			P133	Water side economizer cooling	
			P134	Wider deadband for humidity and temperature control (based on actual design requirements)	
			P140	Refrigeration Systems	
			P141	Select units with high efficiency compressors	
			P142	Increase condensing efficiency and optimize capacity control	
			P143	Install floating-head pressure controls	
			P150	Appliances	
			P151	Residential Energy Star- refrigerator, dishwashers, washing machines, etc	
			P152	Commercial Equipment- Pcs, LCD Monitors, copiers, vending misers	
			P190	Other Power Measures	

Class 2 Building ECM Installation Form

[illegible]