ASHRAE 90.1 & SB-10 - PROJECT INFORMATION — Form 1

Project:	Location of Project:
Building Permit Application No.:	Date:

Designer Information	Designer Information
Signature Date(YY/MM/DD)	Signature Date(YY/MM/DD)
Name Title	Name Title
Address	Address
City Province	City Province

Designer Information	Designer Information
Signature Date(YY/MM/DD)	Signature Date(YY/MM/DD)
Name Title	Name Title
Address	Address
City Province	City Province

THIS CHECKLIST IS A CONVENIENCE DOCUMENT ONLY AND IS BASED ON THE PROVISIONS DESCRIBED IN THE **ANSI/ASHRAE/IESNA 90.1, "ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS"** AND THE **SUPPLEMENTARY STANDARD SB-10**, AS PRESCRIBED IN DIVISION B, SENTENCE 12.2.1.1.(2) OF THE ONTARIO BUILDING CODE.

THIS CHECKLIST IS NOT A SUBSTITUTE FOR COMPLYING WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE. WHILE CARE HAS BEEN TAKEN TO ENSURE ACCURACY OF THIS CHECKLIST, DESIGNERS AND BUILDING OFFICIALS MUST REFER TO THE ACTUAL WORDING AND REQUIREMENTS OF THE ONTARIO BUILDING CODE (O.REGS 350/06 AND ITS AMENDMENTS).

THIS CHECKLIST IS PREPARED BY THE MEMBERS OF THE MECHANICAL SERVICES ADVISORY COMMITTEE (MSAC). MSAC IS A SUBCOMMITTEE OF THE TORONTO AREA CHIEF BUILDING OFFICIALS COMMITTEE AND DRAWS ITS MEMBERSHIP FROM BOTH THE PUBLIC AND PRIVATE SECTORS.
THE MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING AND MSAC MEMBERS DO NOT ASSUME RESPONSIBILITY FOR ERRORS OR OVERSIGHTS RESULTING FROM THE INFORMATION CONTAINED HEREIN.

PLEASE FILL IN THE ACTUAL VALUES INSTALLED AND CHECK BOXES AS THEY APPLY.

ASHRAE 90.1 - 2004 – COMPLIANCE SUMMARY — Form 2

Project:	Location of Project:
Building Permit Application No.:	Designer Name:

Mandatory Provisions

The building design complies with the provisions of the following sections:

Standard Section	Compliance Column	Additional Forms/Comments
5.4 BUILDING ENVELOPE	□ YES	
6.4 HEATING, VENTILATING AND AIR CONDITIONING	□ YES	
7.4 SERVICE WATER HEATING SYSTEMS AND EQUIPMENT	□ YES	
8.4 POWER	□ YES	
9.4 LIGHTING	□ YES	
10.4 OTHER EQUIPMENT	□ YES	

Method of Additional Compliance: □ **Prescriptive Compliance & System Performance**
□ **Performance Compliance**

Prescriptive Compliance

The building design complies with the Prescriptive Compliance of the following sections:

Standard Section Reference		Compliance Column	Additional Forms/Comments
Sec 5 BUILDING ENVELOPE	_____ Prescriptive Requirements (5.5 of SB-10) _____ System Performance Method (5.6 of SB-10)	□ YES	
Sec 6 HVAC SYSTEMS	_____ Prescriptive Requirements	□ YES	
Sec 7 SERVICE WATER HEATING	_____ Simplified Approach (6.3) _____ Prescriptive Path Option (6.5)	□ YES	
Sec 9 LIGHTING	_____ Prescriptive Requirements	□ YES	

Building Energy Performance Compliance

The building design complies with the provisions of Section 11 of ASHRAE 90.1-2004	□ YES □ N/A	

Notes:
Building Design must comply with either the Prescriptive Requirements or the Energy Cost Budget Method. Indicate which method was selected.

ASHRAE 90.1 & SB-10 – SECTION 5 - BUILDING ENVELOPE — Form 3

Project:	Designer Name:

Envelope Summary

	Compliance Column	Additional Forms
Envelope is designed in accordance with applicable sections of SB-10	□ YES	
Electric space heating is used	□ YES □ NO	
SB-10 5.3.1. Overall Thermal Resistance		
SB-10 5.3.2. Thermal transmittance (Ui) of an Individual Path Through an Envelope Assembly U –values are calculated as per ASHRAE Handbook of Fundamentals and in accordance with prescribed procedures, including fenestration and shading coefficients.	□ YES	
Air Leakage and Moisture Migration Building Envelope meets the air infiltration requirements and is designed to prevent moisture migration	□ YES	
Shell Buildings Is this a shell building?	□ YES □ NO	
Compliance with Prescriptive Method **SB-10 Tables used:** _____	□ YES □ NO	

Summary of Prescriptive Requirements

External Wall Criteria	**Design**	**Criteria**	
Gross wall area (GWA)	_____	_____	
Fenestration Area (FA)	_____	_____	
Window-wall ratio (FA/GWA)	_____	_____	
Fenestration SC - dx	_____	_____	
Fenestration PF	_____	_____	
Fenestration U-value	_____	_____	
Wall U-value	_____	_____	
Heat capacity (HC)	_____	_____	
Insulation position	_____	_____	
Equipment Power Density	_____	_____	
Lighting Power Density	_____	_____	
Skylights 5% of the gross roof area or less	_____	_____	
Skylights - min U-value of 3.97 W/m²·K	_____	_____	
Other Envelope Components			
U-Values			
Roof	_____	_____	□ YES
Wall adjacent to unconditioned space	_____	_____	□ YES or □ N/A
Floors over unconditioned space	_____	_____	□ YES or □ N/A
R-Values			
Wall below grade	_____	_____	□ YES or □ N/A
Slab-on-grade □ Heated □ Unheated □ Horizontal □ Vertical Width ____ Height ____	_____	_____	□ YES or □ N/A

Compliance with System Performance Method	□ YES □ NO	
ENSVTD 23 or24 is used and passes	□ YES	
ENVSTD 23 or 24 output is attached	□ YES	□ ENVSTD 23 or 24

ASHRAE 90.1 & SB-10- SECTION 6 - HVAC AND SB-10 — Form 4 Part I

Project:	Designer Name:

SECTION 6.3 SIMPLIFIED APPROACH OPTION			
Reference		Standard Compliance	
6.3.1	**Qualification**		
	The building is 2 stories or less in height and has a gross floor area less than 2323 m^2	□ YES	
6.3.2	**Requirements**		
	(a) All systems serve a single HVAC zone	□ YES	
	(b) If a cooling is installed it is provided be a unitary packaged or split-system air conditioner that is either air-cooled or evaporatively cooled and meets the efficiency requirements shown in Table 6.8.1A of Supplementary Standard SB-10, Volume 2, 2006 O.B.C.	□ YES	□ N/A
	(c) The system cooling capacity exceeds 40 kW and is equipped with air economizer c/w controls as required in Tables 6.5.1.1.3A and 6.5.1.1.3B. The economizer has either barometric or powered relief sized to prevent over-pressurization of the building. Outdoor air dampers for the economizer use are provided with blade and jamb seals	□ YES	□ N/A
	Exceptions: The cooling efficiency meets or exceeds the efficiency requirement in Table 6.3.2	□ YES	□ N/A
	(d) Heating shall be provided by a unitary packaged or split-system heat pump, a fuel-fired furnace, an electric resistance heater or a baseboard system connected to a boiler. All heating equipment meets the efficiency requirements shown in SB-10, Volume 2.	□ YES	
	(e) The outdoor air quantity is less than or equal to 1400 L/s and less than or 70% of the supply air quantity at minimum outdoor air design conditions.	□ YES	□ NO
	➢ Exception: An energy recovery ventilation system is provided in accordance with the Requirement in 6.5.6.	□ YES	□ N/A
	(f) The system shall be controlled by a manual changeover or dual setpoint thermostat.	□ YES	
	(g) Heat pumps equipped with auxiliary internal electric resistance heaters (if any) have controls to prevent supplemental heater operation when the heating load can be met by the heat pump alone.	□ YES	□ N/A
	(h) The system controls do not permit reheat or any other form of simultaneous heating and cooling for humidity control.	□ YES	□ N/A
	(i) Systems are provided with a time switch that (1) can start and stop the system under different schedules for seven different day-types per week; (2) is capable of retaining programming and time setting during a loss of power for a period of at least 10 h; (3) includes an accessible manual override that allows temporary operation of the system for up to 2 h; (4) is capable of temperature setback down to 13° C during off hours; and (5) is capable of temperature setup to 32° C during off hours.	□ YES	□ N/A
	➢ Exception: System serves hotel/motel guest rooms. ➢ Exception: System operates continuously. ➢ Exception: System has both a cooling or heating capacity less than 4.4 kW and a supply fan motor power greater than 0.5 kW.	□ YES	□ N/A
	(j) Piping is insulated in accordance with values given in Table 6.8.3. Insulation exposed to weather is suitable for outdoor service.	□ YES	□ N/A
	➢ Exception: Piping in located within manufactured HVAC units.		
	(k) Ductwork and plenums are insulated in accordance with Tables 6.8.2A and 6.8.2B and sealed in accordance with Tables 6.4.4.2A and 6.4.4.2B.	□ YES	□ N/A
	(l) Air systems to be balanced in accordance with industry-accepted procedures to within 10% of design airflow rates.	□ YES	□ N/A
	(m) Where separate heating and cooling equipment serve the same temperature zone thermostats are interlocked to prevent simultaneous heating and cooling.	□ YES	□ N/A
	(n) Exhausts with a design capacity of over 140 L/s on systems that do not operate continuously shall be equipped with gravity or motorized dampers that will automatically shut when the systems are not in use.	□ YES	□ N/A
	(o) Systems with a design supply air capacity greater than 5000 L/s shall have optimum start controls.	□ YES	□ N/A

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ASHRAE 90.1 & SB-10- SECTION 6 - HVAC AND SB-10 — Form 4 Part II-1

Project:	Designer Name:

SECTION 6.4 MANDATORY PROVISIONS			
Reference		Standard	Compliance
6.4.1	**Equipment Efficiencies, Verification and Labelling Requirements**		
	Equipment shown in SB-10, Chapter 2, Section 6 have a minimum performance at the specified rating conditions in accordance with the specified test procedure. Equipment schedules are provided with drawings	□ YES □ YES	
6.4.2	Load calculations are provided for selection of all equipment and systems.	□ YES	
6.4.3.3.1 **6.4.3.3.2**	Stair vents, elevator shaft vents and other vents are provided with motorized dampers ➢ Exception: Gravity dampers are used since the building is less than 3 stories ➢ Exception: No dampers are required as these systems ventilate unconditioned zones	□ YES	□ N/A
6.4.4.1.3	Piping insulation meets or exceeds the requirements of the Standard.	□ YES	□ N/A
6.4.3.7	Freeze protection on snow/ice melting systems (if any) have controls to prevent operation in warm weather.	□ YES	□ N/A
6.4.3.1.1 **6.4.3.2**	Each zone is individually controlled by thermostatic control Independent perimeter heating systems comply with the control requirements.	□ YES □ YES	□ N/A □ N/A
6.4.3.2	Independent heating and cooling thermostatic controls (if any) are interlocked to prevent crossover of set points.	□ YES	□ N/A
6.7.2	Provisions are taken to balance systems	□ YES	

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ASHRAE 90.1 & SB-10 - SECTION 6 - HVAC AND SB-10 — Form 4 Part II-2

Project:	Designer Name:

SECTION 6.4 MANDATORY PROVISIONS — **Part II, Page 2**

MANDATORY REQUIREMENTS FOR TYPICAL HVAC SYSTEMS

Reference	Title	Check Appropriate Box	Reference	Title	Check Appropriate Box
6.4.3.2.1	Automatic Shutdown	□ Complying non-residential time switch with override □ Complying residential time switch with override □ N/A continuous operation □ N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) □ N/A hotel/motel guestroom	**6.4.3.4**	Heat Pump Aux Heat	□ Complying controls provided □ N/A systems is not a heat pump □ N/A auxiliary is not electric or is not provided □ N/A heat pump covered by NAECA
6.4.3.1.2	Dead Band	□ Dual setpoint control □ Manual change over control □ N/A special occupancy (requires approval) □ N/A heating or cooling only	**6.4.3.5**	Humid Preheat	□ Complying controls provided □ N/A no humidifier
6.4.3.2	Setback Controls	□ Setback provided (down to 13° C) □ N/A continuous operation □ N/A 4.4 kW (eq.)≤ or ≤ 0.5 kW (fan) □ N/A 99.6% Win DB > 4°C □ N/A radiant heating □ N/A no heating	**6.4.3.6**	Humidifica-tion/ Dehumidifica-tion Dead Band	□ Complying controls provided □ N/A no humidification and /or dehumidification
6.4.3.2	Setup Controls	□ C1 Setup provided (to 32°F) □ N/A continuous operation □ N/A 4.4 kW (eq.)≤ or ≤ 0.5 kW (fan) □ N/A 1% Sum DB <= 38° C □ N/A no cooling	**6.4.3.8**	Ventilation Control	□ outdoor air capacity ≥ 1400 L/s and average occupancy > 100/93 m² when partially occupied, controls to reduce outside air are provided □ HRV used □ N/A
6.4.3.2.3	Optimum Start	□ Optimum start provided □ N/A continuous operation □ N/A 4.4 kW (eq.)≤ or ≤ 0.5 kW (fan) □ N/A supply ≤ 5000 L/s	**6.4.4.1.2**	Duct/ Plenum Insulation	□ Complying insulation provided □ N/A all ducts located in conditioned space
6.4.3.2.4	Zone Isolation	□ Isolation zones provided □ N/A continuous operation □ N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) □ N/A all zones on same schedule □ N/A OA/EA ≤ 2500 L/s	**6.4.4.2.1**	Duct Sealing	□ Enter highest seal level (A,B or C) for supply and return
6.4.3.3.3	Shutoff Dampers	□ Motorized shutoff dampers on OA and Exh □ Gravity shutoff dampers on OA and Exh □ N/A continuous operation □ N/A 4.4 kW (eq.)≤ or ≤ 0.5 kW (fan) □ N/A OA/EA ≤ 140 L/s	**6.4.4.2.2**	Duct Leakage Test	□ Y Ducts will be tested for leakage □ N Ducts will not be tested for leakage

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ASHRAE 90.1 & SB-10 - SECTION 6 - HVAC AND SB-10 — Form 4 Part III-1

Project:	Designer Name:

SECTION 6.5 Prescriptive Requirements			
Reference	Item	Standard	Compliance
	Prescriptive Economizers		
6.5.1.1	System employs airside economizers.	□ YES	□ NO
	Systems are exempt from the economizer requirements. Specify economizer exceptions:	□ YES	□ N/A
6.5.1.1.1	Economizer provides up to 100% design airflow.	□ YES	□ N/A
6.5.1.1.2	Economizer is integrated with the mechanical cooling system.	□ YES	□ N/A
6.5.1.1.3	Economizer high limit shutoff complies.	□ YES	□ N/A
6.5.1.1.4	Economizer's dampers meet or exceed leakage requirements.	□ YES	□ N/A
6.5.1.1.5	System provides relief for up to 100% design airflow in outdoor air.	□ YES	□ N/A
6.5.1.4	Economizer complies with the heating system impact requirements.	□ YES	□ N/A
	Systems Employ waterside economizers.	□ YES	□ NO
6.5.1.2.1	Economizer can provide 100% of the load at either the outdoor conditions of 10° C db/7° C wb or 7° C db/4° C wb where required for dehumidification purposes	□ YES	□ N/A
6.5.1.2.2	Pre-cooling coils and heat exchangers have either a $\leq$ 45 kPa pressure drop or are bypassed when economizer is not in use.	□ YES	□ N/A
6.5.1.3	Economizer is integrated with the mechanical coiling system.	□ YES	□ N/A
6.5.1.4	Economizer complies with the heating system impact requirements.	□ YES	□ N/A
	Prescriptive Air-System Requirements		
6.5.2.1	Simultaneous Heating and Cooling	□ YES	□ NO
	Zone minimums were set to meet requirements of *Standard 62.*	□ YES	□ N/A
	Zone minimums were set to ≤ 2 L/s/m² of zone conditioned floor area.	□ YES	□ N/A
	Zone minimums are less than 140 L/s.	□ YES	□ N/A
	Other (requires special documentation and approval).	□ YES	□ N/A
6.5.2.3	Humidity controls use a waterside economizer that complies with 6.5.2.3	□ YES	□ N/A
6.5.1	Systems that employ hydronic cooling and have humidification use a waterside economizer that complies with 6.5.1.	□ YES	□ N/A
6.5.3.1	Prescriptive Fan Power Limitations are met.*****	□ YES	□ N/A
6.5.3.2	Variable air volume fan controls comply with the requirements of 6.5.3.2.	□ YES	□ N/A
	Prescriptive Water-System Requirements		
6.5.2.2.1	Three pipe systems are not used.	□ YES	□ N/A
6.5.2.2.2	Two-pipe changeover heating/cooling systems comply with the requirements of 6.5.2.2.2.	□ YES	□ N/A
6.5.2.2.3	Hydronic (ground -or water-loop) heat pump systems that have equipment for both loop heat addition and loop heat rejection comply with the requirements of 6.5.2.2.3.	□ YES	□ N/A
6.5.4.1 **6.5.4.2** **6.5.4.3**	System pumps greater than 7.5 kW employ : ➢ variable flow controls, ➢ pump isolation ➢ temperature reset.	□ YES	□ N/A
	Prescriptive Special System Requirements		
6.5.5	All heat rejection equipment with motors $\geq$ 5.6 kW employ controls that comply with 6.5.5.	□ YES	□ N/A
6.5.6.1	Exhaust Air Energy Recovery: all fan systems that have both a design supply capacity of $\geq$ 2400 L/S and a minimum outdoor air supply of $\geq$ 70% of the design supply air employ an energy recovery system that complies with 6.5.6.1.	□ YES	□ N/A
6.5.6.2	Heat recovery for service water heating is provided for facilities that operate continuously, have a total water-cooled heat rejection capacity exceeding 1800 kW and have a design service water heating load exceeding 300kW. The heat recovery system complies with 6.5.6.2.	□ YES	□ N/A
6.5.7.1	Kitchen hoods with exhaust flows > 2500 L/S and make-up air tempered not more than 16°C comply with the requirements of 6.5.7.1.	□ YES	□ N/A
6.5.7.2	Fume hoods with a total exhaust system flow > 7500 L/S comply with the requirements of 6.5.7.2.	□ YES	□ N/A
6.5.8.1	Radiant heaters complying with 6.5.8.1 are used to heat unenclosed spaces	□ YES	□ N/A
6.5.9	The cooling equipment with hot-gas bypass controls meets the unloading requirements of 6.5.9.	□ YES	□ N/A

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***** Calculation worksheet (FORM 4 Part III–2) is available in optional form package.

ASHRAE 90.1 & SB-10 - SECTION 7 – SERVICE WATER HEATING COMPLIANCE FORM 5

Project:	Designer Name:

SECTION 7			
Reference	Item	Standard	Compliance
7.4.1	Load calculations have been provided for sizing of systems.	□ YES	□ N/A
7.4.2	Equipment efficiencies meet or exceed the requirements of Table 7.8 of SB-10.	□ YES	□ N/A
7.4.4.2 **7.4.3**	Circulating systems are fully insulated (per Table 6.8.3) and have automatic pump controls.	□ YES	□ N/A
7.4.6	Non-circulating systems have insulated heat traps and outlet piping insulated (per Table 6.8.3) for 2.4 m from the storage tank.	□ YES	□ N/A
7.4.4.4	Tanks with remote heaters have circulation pump controls.	□ YES	□ N/A
7.4.4.1	All water-heating systems have temperature controls that are adjustable down to 49^{o}C or lower.	□ YES	□ N/A
7.4.4.2	Systems designed with pipe heating systems such as heat trace have temperature or time controls.	□ YES	□ N/A
7.4.4.3	Public lavatories have outlet temperature controls that limit the discharge temperature to 43^{o}C.	□ YES	□ N/A
7.4.5.1	Pool heaters have readily accessible controls and gas-fired heaters do not have standing pilot lights.	□ YES	□ N/A
7.4.5.2	Heated outdoor swimming pools have vapour retardant covers.	□ YES	□ N/A
7.4.5.3	Pool heaters and circulation pumps have time switches.	□ YES	□ N/A

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ASHRAE 90.1 & SB-10 - SECTION 8, 9 & 10– LIGHTING, POWER & OTHER EQUIPMENT FORM 6

Project:	Designer Name:

SECTION 8 POWER - MANDATORY PROVISIONS	
Design complies with Mandatory Provisions	□ YES

SECTION 9 LIGHTING– MANDATORY PROVISIONS CHECKLIST			
Reference	Item	Standard Compliance	
9.4.1.1	Automatic lighting shutoff controls are provided based on either a scheduling device or an occupant sensor. • Exception: Space is intended for 24-hour operation. • Exception: Space is smaller than 465 m^2. • Exception: Space for patient care. • Exception: Space where automatic lighting shutoff would endanger safety or security.	□ YES	□ N/A
9.4.1.2	Each space enclosed by ceiling-height partitions has an independent, accessible control that operates general lighting in the space. • Exception: The control is located in a remote location for safety or security reasons.	□ YES	□ N/A
	For spaces less than or equal to 929 m^2, a separate space control is provided for each 232 m^2 of area.	□ YES	□ N/A
	For spaces more than 929 m^2 a separate space control is provided for each 929 m^2 of area.	□ YES	□ N/A
9.4.1.3	Either a photo sensor or an astronomical time switch controls exterior lighting applications. • Exception: Lights must remain on for safety, security or eye adaptation reasons.	□ YES	□ N/A
9.4.2	Two-lamp tandem-wired ballasts.	□ YES	□ N/A
9.4.1.4	(a) Display lighting has a separate control.	□ YES	□ N/A
	(b) Case lighting has a separate control.	□ YES	□ N/A
	(c) Hotel/motel guest rooms have a master switch at the main entry.	□ YES	□ N/A
	(d) Task lighting has a separate control.	□ YES	□ N/A
	(e) Nonvisual lighting has a separate control.	□ YES	□ N/A
	(f) Demonstration lighting has a separate control.	□ YES	□ N/A
9.4.3	Exit signs do not exceed 5 W per face.	□ YES	□ N/A
9.4.4	Exterior building grounds luminaires greater than 100 W have lamps with minimum efficacy of 60 lumens/W. • Exception: Luminaire is activated with a motion sensor.	□ YES	□ N/A

SECTION 10 OTHER EQUIPMENT - MANDATORY PROVISIONS		
Reference	Item	Standard Compliance
10.4.1	Electric motors comply with Table 10.8 of SB-10	□ YES

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ASHRAE 90.1 & SB-10 - SECTION 9 – LIGHTING COMPLIANCE DOCUMENTATION FORM 7-1

Project:	Designer Name:

Prescriptive Compliance			
Reference		Code Compliance	
9.2.2.3	The *installed interior lighting power* (identified in accordance with 9.1.3) shall not exceed the *interior power allowance* (developed in accordance with 9.5 or 9.6)*	□ YES	
9.2.2.3	**INTERIOR CONNECTED LIGHTING POWER** Limits: Total interior installed lighting power (_____ W) ≤ value of interior lighting power allowance (_____ W)	□ YES	□ N/A
9.5.1	**CALCULATION OF INTERIOR LIGHTING POWER ALLOWANCE BY BUILDING TYPE** Interior Lighting Power Allowance (ILPA) by Building Type: Building Type _____ (Table 9.5.1) Lighting Power Density _____ W/m² (Table 9.5.1) Gross Lighted Area _____ m² ILPA _____ W	□ YES	□ N/A
9.6.1	**CALCULATION OF INTERIOR LIGHTING POWER ALLOWANCE BY SPACE FUNCTION** Calculation of Interior Lighting Power Allowance for each space based on Table 9.6.1	□ YES	□ N/A
9.2.2.3	Installed Interior Lighting Power is calculated and worksheet(s) are attached*	□ YES	
9.4.5	Total Exterior Installed Lighting Power _____ W ≤ value of exterior lighting power allowance _____W.	□ YES	□ N/A

***** Calculation worksheet (FORM 7-2 and FORM 7-3) is available in optional form package.

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ENERGY COST BUDGET (ECB) COMPLIANCE REPORT — FORM 8 - 1

Project:	Designer Name:
Weather Data:	

Space Summary			
			Simulation Program _____
Building Use	m²	Principal Heat Source: □ Fossil Fuel □ Electricity □ Solar/Site Recovered □Other	Proposed Building Energy Cost =_____ Budget Building Energy Cost =_____

Compliance Result

The design detailed in the above referenced plans complies with the mandatory requirements of the ANSI/ASHRAE/IESNA 90.1-2004 Standard and the additional requirements of Supplementary Standard SB-10. The Design Energy Cost does not exceed the Energy Cost Budget. Therefore, this design **DOES COMPLY** with the ANSI/ASHRAE/IESNA 90.1-2004 ECB Compliance Methodology and the additional requirements of Supplementary Standard SB-10.

Individual certifying authenticity of the data provided in this analysis:

Signature:	Title:

*Add summary computer output or complete FORM 8-2, available in optional form package.

ASHRAE 90.1 -2004 OPTIONAL FORMS PACKAGE

ASHRAE 90.1 & SB-10 - SECTION 6 - HVAC AND SB-10 — Form 4 Part III-2

Project:	Designer Name:

Complete one worksheet for each fan system > 4kW

Prescriptive Fan Power Limitations (6.5.3.1)

Supply Fan			Return Fan		Exhaust Fan		Series-Style Fan Powered Box		Total System Motor (kW)
Tag	Supply (L/s)	Motor (kW)	Tag	Motor (kW)	Tag	Motor (kW)	Tag	Motor (kW)	
		←Total Supply L/s						Total System Motor kW→	

kW Allowance = Value (Table 6.5.3.1) x Total Supply L/s÷1000
=_____kW

kW Allowance ≥_____Total System Motor (kW)

Credits and/or adjustments*→ Adjusted kW Allowance* _____ kW ≥_____Total System Motor (kW)

* Attach calculations and documentation if credits or temperature adjustments are used. Refer to 6.5.3.1 for the formulas.

Credits and adjustments are available for the following:

- *Clean filter pressure drops in excess of 250 Pa;*
- *Pressure drop due to heat recovery coils or devices or evaporative cooling equipment or devices;*
- *Relief fans that operate during peak cooling due to high ventilation rates; and*
- *Room to cooling air supply temperature differences that are greater than 11.1°C (e.g. low temperature supply)*

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ASHRAE 90.1 & SB-10 - SECTION 9 – LIGHTING COMPLIANCE DOCUMENTATION FORM 7-2

Project:	Designer Name:

Interior Power Allowance (Building Area Method) Table 9.5.1			
Building Type	Lighting Power Density (W/m^2)	Building Area (m^2)	Lighting Power Allowance (W)
		Total	

Interior Lighting Power Allowance (Space by Space Method) Table 9.6.1				
Building Type	Common/Specific Space Type	Lighting Power Density (W/m^2)	Space Area (m^2)	Lighting Power Allowance (W)
			Total	

Interior Connected Lighting Power				
ID	Luminaire Description (including number of lamps per fixture, watts per lamp, type of ballast, type of fixture)	Number of Luminaires	Watts/ Luminaire	Total Watts

* If additional space is required to provide further information, please attach a separate sheet(s) of paper.
** If trade offs or exceptions are used attach calculations.

Note: Numbering is based on **SI** edition of **ASHRAE 90.1-2004**. Other editions may have different numbering.

ASHRAE 90.1 & SB-10 - SECTION 9 – LIGHTING COMPLIANCE DOCUMENTATION FORM 7-3

Project:	Designer Name:

Exterior Building Lighting Power Allowance			
Application	Allowance	Area or Length (m² or m)	Tradable Power Allowance
		Tradable Power Allowance	

Exterior Installed Lighting Power				
ID	Luminaire description (including number of lamps per fixture, watts per lamp, type of ballast, type of fixture)	Number of Luminaires	Watts/ Luminaire	Total Watts
			Total	

* If additional space is required to provide further information, please attach a separate sheet(s) of paper.
** If trade offs or exceptions are used attach calculations.

ENERGY COST BUDGET (ECB) COMPLIANCE REPORT — FORM 8–2

Project:	Designer Name:

Energy Summary Use by End Use						
End Use	Energy Type	Proposed Building Energy (106 Btu/yr)	Proposed Building Peak (10^3 Btu/h)	Budget Building Energy (106 Btu/yr)	Budget Building Peak (10^3 Btu/h)	Proposed/ Budget Energy (%)
Lighting (conditioned)						
Space Heating						
Space Cooling						
Pumps						
Heat Rejection						
Fans						
Service water heating						
Office equipment						
Elevators & escalators						
Refrigeration (food etc.)						
Cooking (commercial)						
Total Building Consumption						

Energy Summary by End Use						
	Proposed Building		Budget Building		Proposed /Budget	
	Energy (106 Btu/yr)	Cost ($/yr)	Energy (106 Btu/yr)	Cost ($/yr)	Energy (%)	Cost (%)
Electricity						
Natural Gas						
Other Fossil Fuel						
District steam/chilled water						
Total Nonsolar						
Solar or site recovered						
Total including solar						

* These results use assumptions for showing compliance during a typical year; actual energy costs may be substantially different.
** If additional space is required to provide further information, please attach a separate sheet(s) of paper.