

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
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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	<input type="checkbox"/> YES	
6.4 HEATING, VENTILATING AND AIR CONDITIONING	<input type="checkbox"/> YES	
7.4 SERVICE WATER HEATING SYSTEMS AND EQUIPMENT	<input type="checkbox"/> YES	
8.4 POWER	<input type="checkbox"/> YES	
9.4 LIGHTING	<input type="checkbox"/> YES	
10.4 OTHER EQUIPMENT	<input type="checkbox"/> 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)	<input type="checkbox"/> YES	
Sec 6 HVAC SYSTEMS _____ Prescriptive Requirements	<input type="checkbox"/> YES	
Sec 7 SERVICE WATER HEATING _____ Simplified Approach (6.3) _____ Prescriptive Path Option (6.5)	<input type="checkbox"/> YES	
Sec 9 LIGHTING _____ Prescriptive Requirements	<input type="checkbox"/> YES	

Building Energy Performance ComplianceThe 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.

Project:

Designer Name:

Envelope Summary

	Compliance Column	Additional Forms
Envelope is designed in accordance with applicable sections of SB-10	<input type="checkbox"/> YES	
Electric space heating is used	<input type="checkbox"/> YES <input type="checkbox"/> 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.	<input type="checkbox"/> YES	
Air Leakage and Moisture Migration Building Envelope meets the air infiltration requirements and is designed to prevent moisture migration	<input type="checkbox"/> YES	
Shell Buildings Is this a shell building?	<input type="checkbox"/> YES <input type="checkbox"/> NO	
Compliance with Prescriptive Method SB-10 Tables used:	<input type="checkbox"/> YES <input type="checkbox"/> 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/m ² ·K	_____	_____
Other Envelope Components		
<u>U-Values</u>		
Roof	_____	_____
Wall adjacent to unconditioned space	_____	_____
Floors over unconditioned space	_____	_____
<u>R-Values</u>		
Wall below grade	_____	_____
Slab-on-grade <input type="checkbox"/> Heated <input type="checkbox"/> Unheated	_____	_____
<input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	_____	_____
Width _____ Height _____		

Compliance with System Performance Method	<input type="checkbox"/> YES <input type="checkbox"/> NO	
ENSVTD 23 or 24 is used and passes	<input type="checkbox"/> YES	
ENVSTD 23 or 24 output is attached	<input type="checkbox"/> YES	<input type="checkbox"/> ENVSTD 23 or 24

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	<input type="checkbox"/> YES
6.3.2	Requirements	
	(a) All systems serve a single HVAC zone	<input type="checkbox"/> YES
	(b) If a cooling is installed it is provided by 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.	<input type="checkbox"/> YES <input type="checkbox"/> 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 Exceptions: The cooling efficiency meets or exceeds the efficiency requirement in Table 6.3.2	<input type="checkbox"/> YES <input type="checkbox"/> N/A <input type="checkbox"/> YES <input type="checkbox"/> 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.	<input type="checkbox"/> 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. ➤ Exception: An energy recovery ventilation system is provided in accordance with the Requirement in 6.5.6.	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> N/A
	(f) The system shall be controlled by a manual changeover or dual setpoint thermostat.	<input type="checkbox"/> 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.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	(h) The system controls do not permit reheat or any other form of simultaneous heating and cooling for humidity control.	<input type="checkbox"/> YES <input type="checkbox"/> 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. ➤ 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.	<input type="checkbox"/> YES <input type="checkbox"/> N/A <input type="checkbox"/> YES <input type="checkbox"/> 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. ➤ Exception: Piping is located within manufactured HVAC units.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	(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.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	(l) Air systems to be balanced in accordance with industry-accepted procedures to within 10% of design airflow rates.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	(m) Where separate heating and cooling equipment serve the same temperature zone thermostats are interlocked to prevent simultaneous heating and cooling.	<input type="checkbox"/> YES <input type="checkbox"/> 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.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	(o) Systems with a design supply air capacity greater than 5000 L/s shall have optimum start controls.	<input type="checkbox"/> YES <input type="checkbox"/> N/A

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

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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	<input type="checkbox"/> YES <input type="checkbox"/> YES
6.4.2	Load calculations are provided for selection of all equipment and systems.	<input type="checkbox"/> 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	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.4.4.1.3	Piping insulation meets or exceeds the requirements of the Standard.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.4.3.7	Freeze protection on snow/ice melting systems (if any) have controls to prevent operation in warm weather.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.4.3.1.1	Each zone is individually controlled by thermostatic control	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.4.3.2	Independent perimeter heating systems comply with the control requirements.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.4.3.2	Independent heating and cooling thermostatic controls (if any) are interlocked to prevent crossover of set points.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.7.2	Provisions are taken to balance systems	<input type="checkbox"/> YES

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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	<input type="checkbox"/> Complying non-residential time switch with override <input type="checkbox"/> Complying residential time switch with override <input type="checkbox"/> N/A continuous operation <input type="checkbox"/> N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) <input type="checkbox"/> N/A hotel/motel guestroom	6.4.3.4	Heat Pump Aux Heat	<input type="checkbox"/> Complying controls provided <input type="checkbox"/> N/A systems is not a heat pump <input type="checkbox"/> N/A auxiliary is not electric or is not provided <input type="checkbox"/> N/A heat pump covered by NAECA
6.4.3.1.2	Dead Band	<input type="checkbox"/> Dual setpoint control <input type="checkbox"/> Manual change over control <input type="checkbox"/> N/A special occupancy (requires approval) <input type="checkbox"/> N/A heating or cooling only	6.4.3.5	Humid Preheat	<input type="checkbox"/> Complying controls provided <input type="checkbox"/> N/A no humidifier
6.4.3.2	Setback Controls	<input type="checkbox"/> Setback provided (down to 13° C) <input type="checkbox"/> N/A continuous operation <input type="checkbox"/> N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) <input type="checkbox"/> N/A 99.6% Win DB > 4°C <input type="checkbox"/> N/A radiant heating <input type="checkbox"/> N/A no heating	6.4.3.6	Humidification/ Dehumidification Dead Band	<input type="checkbox"/> Complying controls provided <input type="checkbox"/> N/A no humidification and /or dehumidification
6.4.3.2	Setup Controls	<input type="checkbox"/> C1 Setup provided (to 32°F) <input type="checkbox"/> N/A continuous operation <input type="checkbox"/> N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) <input type="checkbox"/> N/A 1% Sum DB ≤ 38° C <input type="checkbox"/> N/A no cooling	6.4.3.8	Ventilation Control	<input type="checkbox"/> outdoor air capacity ≥ 1400 L/s and average occupancy > 100/93 m ² when partially occupied, controls to reduce outside air are provided <input type="checkbox"/> HRV used <input type="checkbox"/> N/A
6.4.3.2.3	Optimum Start	<input type="checkbox"/> Optimum start provided <input type="checkbox"/> N/A continuous operation <input type="checkbox"/> N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) <input type="checkbox"/> N/A supply ≤ 5000 L/s	6.4.4.1.2	Duct/ Plenum Insulation	<input type="checkbox"/> Complying insulation provided <input type="checkbox"/> N/A all ducts located in conditioned space
6.4.3.2.4	Zone Isolation	<input type="checkbox"/> Isolation zones provided <input type="checkbox"/> N/A continuous operation <input type="checkbox"/> N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) <input type="checkbox"/> N/A all zones on same schedule <input type="checkbox"/> N/A OA/EA ≤ 2500 L/s	6.4.4.2.1	Duct Sealing	<input type="checkbox"/> Enter highest seal level (A,B or C) for supply and return
6.4.3.3.3	Shutoff Dampers	<input type="checkbox"/> Motorized shutoff dampers on OA and Exh <input type="checkbox"/> Gravity shutoff dampers on OA and Exh <input type="checkbox"/> N/A continuous operation <input type="checkbox"/> N/A 4.4 kW (eq.) ≤ or ≤ 0.5 kW (fan) <input type="checkbox"/> N/A OA/EA ≤ 140 L/s	6.4.4.2.2	Duct Leakage Test	<input type="checkbox"/> Y Ducts will be tested for leakage <input type="checkbox"/> N Ducts will not be tested for leakage

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Project:

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SECTION 6.5 Prescriptive Requirements		
Reference	Item	Standard Compliance
	Prescriptive Economizers	
6.5.1.1	System employs airside economizers.	<input type="checkbox"/> YES <input type="checkbox"/> NO
	Systems are exempt from the economizer requirements. Specify economizer exceptions:	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.1.1	Economizer provides up to 100% design airflow.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.1.2	Economizer is integrated with the mechanical cooling system.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.1.3	Economizer high limit shutoff complies.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.1.4	Economizer's dampers meet or exceed leakage requirements.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.1.5	System provides relief for up to 100% design airflow in outdoor air.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.4	Economizer complies with the heating system impact requirements.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	Systems Employ waterside economizers.	<input type="checkbox"/> YES <input type="checkbox"/> 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	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.2.2	Pre-cooling coils and heat exchangers have either a < 45 kPa pressure drop or are bypassed when economizer is not in use.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.3	Economizer is integrated with the mechanical cooling system.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1.4	Economizer complies with the heating system impact requirements.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	Prescriptive Air-System Requirements	
6.5.2.1	Simultaneous Heating and Cooling	<input type="checkbox"/> YES <input type="checkbox"/> NO
	Zone minimums were set to meet requirements of <i>Standard 62</i> .	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	Zone minimums were set to ≤ 2 L/s/m ² of zone conditioned floor area.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	Zone minimums are less than 140 L/s.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	Other (requires special documentation and approval).	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.2.3	Humidity controls use a waterside economizer that complies with 6.5.2.3	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.1	Systems that employ hydronic cooling and have humidification use a waterside economizer that complies with 6.5.1.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.3.1	Prescriptive Fan Power Limitations are met.*	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.3.2	Variable air volume fan controls comply with the requirements of 6.5.3.2.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	Prescriptive Water-System Requirements	
6.5.2.2.1	Three pipe systems are not used.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.2.2.2	Two-pipe changeover heating/cooling systems comply with the requirements of 6.5.2.2.2.	<input type="checkbox"/> YES <input type="checkbox"/> 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.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.4.1	System pumps greater than 7.5 kW employ :	
6.5.4.2	> variable flow controls,	
6.5.4.3	> pump isolation	
	> temperature reset.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
	Prescriptive Special System Requirements	
6.5.5	All heat rejection equipment with motors ≥ 5.6 kW employ controls that comply with 6.5.5.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.6.1	Exhaust Air Energy Recovery: all fan systems that have both a design supply capacity of ≥ 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.	<input type="checkbox"/> YES <input type="checkbox"/> 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.	<input type="checkbox"/> YES <input type="checkbox"/> 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.	<input type="checkbox"/> YES <input type="checkbox"/> 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.	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.8.1	Radiant heaters complying with 6.5.8.1 are used to heat unenclosed spaces	<input type="checkbox"/> YES <input type="checkbox"/> N/A
6.5.9	The cooling equipment with hot-gas bypass controls meets the unloading requirements of 6.5.9.	<input type="checkbox"/> YES <input type="checkbox"/> N/A

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

Project:

Designer Name:

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

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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. <ul style="list-style-type: none"> Exception: Space is intended for 24-hour operation. Exception: Space is smaller than 465 m². Exception: Space for patient care. Exception: Space where automatic lighting shutoff would endanger safety or security. 	<input type="checkbox"/> YES	<input type="checkbox"/> 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. <ul style="list-style-type: none"> Exception: The control is located in a remote location for safety or security reasons. 	<input type="checkbox"/> YES	<input type="checkbox"/> 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.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
	For spaces more than 929 m ² a separate space control is provided for each 929 m ² of area.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
9.4.1.3	Either a photo sensor or an astronomical time switch controls exterior lighting applications. <ul style="list-style-type: none"> Exception: Lights must remain on for safety, security or eye adaptation reasons. 	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
9.4.2	Two-lamp tandem-wired ballasts.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
9.4.1.4	(a) Display lighting has a separate control.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
	(b) Case lighting has a separate control.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
	(c) Hotel/motel guest rooms have a master switch at the main entry.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
	(d) Task lighting has a separate control.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
	(e) Nonvisual lighting has a separate control.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
	(f) Demonstration lighting has a separate control.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
9.4.3	Exit signs do not exceed 5 W per face.	<input type="checkbox"/> YES	<input type="checkbox"/> N/A
9.4.4	Exterior building grounds luminaires greater than 100 W have lamps with minimum efficacy of 60 lumens/W. <ul style="list-style-type: none"> Exception: Luminaire is activated with a motion sensor. 	<input type="checkbox"/> YES	<input type="checkbox"/> 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	<input type="checkbox"/> YES	

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

FORM 7-1

Project:	Designer Name:
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Prescriptive Compliance		
Reference		Code Compliance
9.2.2.3	The <i>installed interior lighting power</i> (identified in accordance with 9.1.3) shall not exceed the <i>interior power allowance</i> (developed in accordance with 9.5 or 9.6)*	<input type="checkbox"/> YES
9.2.2.3	INTERIOR CONNECTED LIGHTING POWER Limits: Total interior installed lighting power (_____ W) ≤ value of interior lighting power allowance (_____ W)	<input type="checkbox"/> YES <input type="checkbox"/> 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/m ² (Table 9.5.1) Gross Lighted Area _____ m ² ILPA _____ W	<input type="checkbox"/> YES <input type="checkbox"/> 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	<input type="checkbox"/> YES <input type="checkbox"/> N/A
9.2.2.3	Installed Interior Lighting Power is calculated and worksheet(s) are attached*	<input type="checkbox"/> YES
9.4.5	Total Exterior Installed Lighting Power _____ W ≤ value of exterior lighting power allowance _____ W.	<input type="checkbox"/> YES <input type="checkbox"/> 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			
Building Use	m ²	Principal Heat Source:	Simulation Program _____
		<input type="checkbox"/> Fossil Fuel	Proposed Building
		<input type="checkbox"/> Electricity	Energy Cost = _____
		<input type="checkbox"/> Solar/Site Recovered	Budget Building
		<input type="checkbox"/> Other	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:
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*Add summary computer output or complete FORM 8-2, available in optional form package.

ASHRAE 90.1 -2004 OPTIONAL FORMS PACKAGE

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→				

$\text{kW Allowance} = \text{Value (Table 6.5.3.1)} \times \text{Total Supply L/s} \div 1000$ $= \text{_____ kW}$ $\text{kW Allowance} \geq \text{_____ Total System Motor (kW)}$
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)

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 7-2**

Project:	Designer Name:
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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:
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Exterior Building Lighting Power Allowance			
Application	Allowance	Area or Length (m ² 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:
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Energy Summary Use by End Use						
End Use	Energy Type	Proposed Building		Budget Building		Proposed/ Budget Energy (%)
		Energy (106 Btu/yr)	Peak (10 ³ Btu/h)	Energy (106 Btu/yr)	Peak (10 ³ Btu/h)	
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.