

# VERMONT 2005 GUIDELINES FOR ENERGY EFFICIENT COMMERCIAL CONSTRUCTION CODE COMPLIANCE WORKSHEETS

## BUILDING ENVELOPE WORKSHEET

Office Building

10 Energy Way, Megawatt City, VT 05555

Project Description

Site Address (street, town, ZIP Code)

### CBES Standard Used



2005 VT Guidelines For Energy Efficient Commercial Construction



ASHRAE Standard 90.1-2004

## BUILDING ENVELOPE

Foundation Type: Slab on grade

Below-Grade Walls - Type & R-value: N/ A

Slab-on-Grade - Type & R-value: unheated slab, R-10 perimeter for 48 inches

Floors over Unconditioned Spaces – Type & R-value: N/ A

Roof - Type & R-value: Wood framed, R-38 fiberglass batts in attic

Above-Grade Walls - Type & R-value: Wood framed, R-21 fiberglass batts

Windows - Type & U-value: Wood framed, U-.32

Windows - SHGC: .40

Window to Wall Ratio (%): 18%

Skylights - Type & U-value: Glass, U-.60

Skylights - SHGC: .40

Skylight to Roof Ratio (%): 3%

Opaque Swinging Doors - U-value: U-.45

Note: Use of entire assembly U-values or area weighted average U, R, or SHGC values are acceptable

### ADDITIONAL BUILDING ENVELOPE ENERGY FEATURES OR COMMENTS

1 roll up door with R-10 insulation

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## MECHANICAL SYSTEMS WORKSHEET

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## MECHANICAL SYSTEMS

Space Heating Fuel: Nat ural Gas

Space Heating System: Hot Air Furnace

Space Heating Size: 250,000 bt u/ hr

Space Heating System Efficiency: 90% t her mal ef f iciency

Air Conditioning System: Split System, air cooled

Air Conditioning Size: 135,000 bt u/ hr

Air Conditioning Efficiency: 11 EER

Water Heating Fuel: Nat ural Gas

Water Heating System: Fuel f ired st or age unit

Water Heating System Size: 80 gallon unit , 165,000 bt u/ hr

Water Heating System Efficiency: 84% t her mal ef f iciency

Ventilation System: Heat recovery vent ilat or

## ADDITIONAL MECHANICAL SYSTEMS ENERGY FEATURES OR COMMENTS

Set Back Thermostats

## INTERIOR LIGHTING POWER DENSITY WORKSHEETS

**10 Energy Way, Megawatt City, VT 05555**

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### LPD Standard Used

☐ ASHRAE Standard 90.1-2004

☒ **Building Area Method** – *(Complete Building Area Method Section)*

☐ **Space-by-Space Method** – *(Complete Space-by-Space Method Section)*

## Building Area Method Section

Interior Lighting Power Allowance (Building Area Method)			
Building Type	LPD (W/ft²)	Building Area (ft²)	Lighting Power Allowance (W)
Office	1.0	3000	3000
Total Interior Lighting Power Allowance (W)			3000

Interior Connected Lighting Power (Building Area Method)			
Luminaire Description	# of Luminaires	Watts Per Luminaire	Total Watts
3 Lamp F32T8 w/ electronic ballasts	30	93	2790
Total Interior Connected Lighting Power (W)			2790

Lighting Power Density is in Compliance if the Total Interior Connected Lighting Power (W) is less than or equal to the Total Interior Lighting Power Allowance (W)

## Space-by-Space Method Section

Interior Lighting Power Allowance (Space-by-Space Method)				
Building Type	Space Type	LPD (W/ft <sup>2</sup> )	Space Area (ft <sup>2</sup> )	Lighting Power Allowance (W)
N/ A				
Total Interior Lighting Power Allowance (W)				

Interior Connected Lighting Power (Space-by-Space Method)			
Luminaire Description	# of Luminaires	Watts Per Luminaire	Total Watts
Total Interior Connected Lighting Power (W)			
Lighting Power Density is in Compliance if the Total Interior Connected Lighting Power (W) is less than or equal to the Total Interior Lighting Power Allowance (W)			

## Space-by-Space Method Section

### Additional Interior Lighting Power Allowance (Optional)

*The Additional Interior Lighting Power Allowance is an optional section of the Space-by-Space LPD Method to be used only for specific purposes, such as decorative lighting or retail display lighting. The Additional Interior Lighting Power Allowance can only be used for its intended purpose and cannot be traded off to be used for general interior lighting power allowance.*

#### Additional Interior Lighting Power Allowance (Space-by-Space Method)

Space or Display	Type	Area (ft2)	Unit Allowance (W/ft2)	Allowance (W)	Installed Power (W)
N/ A					

#### Additional Interior Connected Lighting Power (Space-by-Space Method)

Space or Display	Luminaire Description	# of Luminaires	Watts Per Luminaire	Total Watts

*Additional Lighting Power Density is in Compliance if the Installed Power (W) is less than or equal to the Allowance (W) for each space or display the additional interior lighting power allowance is used for.*