

## COST ANALYSIS

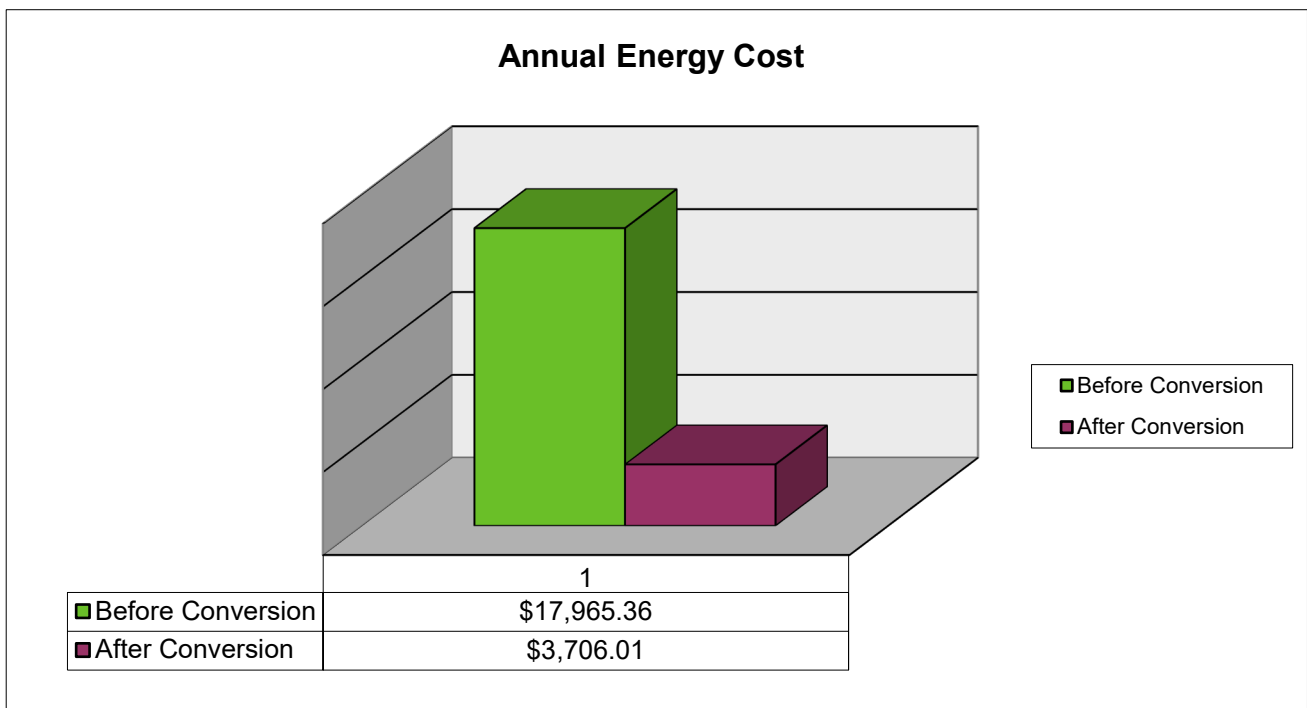
### Northland Towers Office Center Plaza Building

<b>Project Cost</b>	\$28,561.80
<b>DTE Incentive</b>	\$7,293.56
<b>Retrofit Costs (With Rebates)</b>	\$21,268.24
<b>Annual Energy Savings</b>	\$14,259.35
<b>Project Pay Back Period</b>	1.49 Years
<b>Return on Investment Thru 5 years</b>	<b>207.05%</b>



Project pay back period equal to  $\frac{\text{Project Cost} - \text{DTE Incentive}}{\text{Annual Energy Savings}}$

Project Cost less DTE Incentive divided by Annual Energy Savings



**Reduction in energy cost      79%**



**M.N.C.**  
"Professional Services"

# Northland Towers Office Center Power Usage Sheet

Plaza Building

3/21/2014

DTE  
rate/kw 0.11

## Presently installed lighting plant

LINE	QTY	DESCRIPTION	Watts Per	DTE watts per	Watts Used	DTE watts Used	Annual Hours	Annual KWH	DTE Annual KWH	Annual energy cost	Data Reference	Page
81	2	F35T12U3 lamp/ballast B234SP120M-A 2 x 2 U lamp fixture	74	60	5994	4860	8760	52,507	42,574	\$5,775.82	B234SR120M-A.pdf	
6		F40T12 lamp/ballast B340R120HP 3 lamp fixture	113	85	678	510	8760	5,939	4,468	\$653.32	F40T12 B340R120HP	
112		F48T12 Lamp/ballast B260IUNVHP Universal One lamp bi pin fixture	47	31	5264	3472	8760	46,113	30,415	\$5,072.39	F48T12CW.pdf B260IUNVHP.pdf	
24		F48T12 Lamp/ballast SM-2E40-S-TP ADVANCE Four lamp bi pin fixture	192	112	4608	2688	8760	40,366	23,547	\$4,440.27	F48T12CW.pdf SM-2E40-S-TP.pdf	
28		75w Incandescent lamp	75	75	2100	2100	8760	18,396	18,396	\$2,023.56		

251 Units

**Totals 163,321 119,399 \$17,965.36**

## Proposed lighting plant

LINE	QTY	DESCRIPTION	Watts Per	DTE watts per	Watts Used	DTE watts Used	Annual Hours	Annual KWH	DTE Annual KWH	Annual energy cost	Data Reference	Page
28		9 W led P20/50 KML LAMP	9	9	252	252	8760	2,208	2,208	\$242.83	par 20 led .pdf	
162		LED 2' tube 55k Bp clear 109-23112xx	9	9	1458	1458	8760	12,772	12,772	\$1,404.93	led Tube spec sheet v1.1	
18		(1) 4' LED 12W R1-41250K-85-CB2-V1 Clear	12	12	216	216	8760	1,892	1,892	\$208.14	4' LED tube spec 3.12.13.pdf	
112		(1) 4' LED 12W R1-41250K-85-FB2-V1 frosted	12	12	1344	1344	8760	11,773	11,773	\$1,295.08	4' LED tube spec 3.12.13.pdf	
24		(2) 4' LED 12W R2-41250K-70-CB2-V1DIM	24	24	576	576	8760	5,046	5,046	\$555.03	4' LED tube spec 3.12.13.pdf	

344 Units

**Totals 33,691 33,691 \$3,706.01**

Measure cost DTE KWH Savings

\$13,168.51 Proposed Custom lighting plant 69519

Actual Kw savings 129,630  
Total Annual Savings \$14,259.35



## Northland Towers Office Center

## Project Notes

### Plaza Building

#### 1st floor

Qty (6) 2 x 4 F48T12 3 lamp fixture retrofitted to 2 4' 5000k LED lamp clear

Qty (8) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

Qty (18) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp clear

##### Men's room

Qty (2) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

Qty (1) 2 x 4 F48T12 3 lamp fixture retrofitted to 2 4' 5000k LED lamp clear

##### Ladies room

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (4) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

#### 2nd Floor

Qty (10) 2 x 4 F48T12 4 lamp fixture retrofitted to 2 4' 5000k LED lamp

##### Men's room

Qty (2) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

##### Ladies room

Qty (4) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (2) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

#### 3rd Floor, 4th Floor

Private suites

#### 5th Floor

Qty (10) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

##### Men's room

Qty (1) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

Qty (2) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

##### Ladies room

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (1) 2 x 4 F48T12 4 lamp fixture retrofitted to 2 4' 5000k LED lamp

#### 6th Floor

Qty (10) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

##### Men's room

Qty (2) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (1) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

##### Ladies room

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (4) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

#### 7th Floor

Qty (2) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

Qty (7) 2 x 4 F48T12 4 lamp fixture retrofitted to 2 4' 5000k LED lamp

##### Men's room

Qty (2) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

##### Ladies room

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (3) 2 x 4 F48T12 4 lamp fixture retrofitted to 2 4' 5000k LED lamp

#### 8th Floor

Qty (10) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

##### Men's room

Qty (2) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (1) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

##### Ladies room

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (4) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

#### 9th Floor

Qty (10) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

##### Men's room

Qty (2) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (1) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

##### Ladies room

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (4) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED



## Northland Towers Office Center

## Project Notes

### Plaza Building

#### 10th Floor

Qty (12) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

##### Uni sex bathroom

Qty (1) 2 x 4 F48T12 4 lamp fixture retrofitted to 2 4' 5000k LED lamp

##### Men's room

Qty (2) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (1) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

##### Ladies room

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

Qty (4) Recessed cans with 75 watt incandescent converted to 9w P20/27 LED

#### 11th Floor

Qty (10) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

##### Men's room

Qty (1) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp

Qty (1) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

##### Ladies room

Qty (1) 2 x 4 F48T12 4 lamp fixture retrofitted to 2 4' 5000k LED lamp

Qty (3) 1 x 4 F48T12 1 lamp fixture retrofitted to 1 4' 5000k LED lamp Frosted

#### Basement

Qty (7) 2 x 2 F35T12U3 retrofitted to 2' 5000k LED 2 lamp