

# Energy Analysis

## Existing ramp

Readings from Connexus bills		Multiplier					
11/8/2011	20249						
11/8/2010	<u>16718</u>						
	3531 x		100	<b>353100</b> Kwh per year			
Total Annual Cost=		353100 Kwh	x	\$	0.10 = \$	33,544.50	29425 Kwh per month
Lighting Costs Only	# of fixtures	Draw (W)	Hours	Cost/Kwh			Kwh / year Kwh / month
100W Metal halides	201	130	5000	\$	0.10 = \$	12,411.75	130650 10888
150 W Triple Light	8	150	5000	\$	0.10 = \$	570.00	6000 500
70 W Wall sconce	15	70	5000	\$	0.10 = \$	498.75	5250 438
100 W Canopy Light	32	100	5000	\$	0.10 = \$	1,520.00	16000 1333
					\$	15,000.50	<b>157900</b> 13158

Therefore approx. 45% of electric costs are due to the exterior lighting  
 The rest is the HVAC system in the stair elevator tower. This will remain constant except for the energy cost increase.

## Option Analysis

Option 1: Stay with current lighting fixture

Existing ramp	# of fixtures	Draw (W)	Hours	Cost/Kwh			Kwh / year	Kwh / month	Total Annual Savings
100W Metal halides	201	130	5000	\$	0.12 = \$	15,678.00	130650	10888	
150 W Triple Light	8	150	5000	\$	0.12 = \$	720.00	6000	500	
70 W Wall sconce	15	70	5000	\$	0.12 = \$	630.00	5250	438	
100 W Canopy Light	32	100	5000	\$	0.12 = \$	1,920.00	16000	1333	
Expansion ramp									
100W Metal halides	86	130	5000	\$	0.12 = \$	6,708.00	55900	4658	
150 W Triple Light	2	150	5000	\$	0.12 = \$	180.00	1500	125	
70 W Wall sconce	8	70	5000	\$	0.12 = \$	336.00	2800	233	
100 W Canopy Light	4	100	5000	\$	0.12 = \$	240.00	2000	167	
Projected annual lighting cost						<b>\$ 26,412.00</b>	220100	18342	\$ -

Option 2: Change design to include fluorescent in ramp expansion but leave existing ramp alone

Existing ramp	# of fixtures	Draw (W)	Hours	Cost/Kwh			Kwh / year	Kwh / month	Total Annual savings
100W Metal halides	201	130	5000	\$	0.12 = \$	15,678.00	130650	10888	
150 W Triple Light	8	150	5000	\$	0.12 = \$	720.00	6000	500	
70 W Wall sconce	15	70	5000	\$	0.12 = \$	630.00	5250	438	
100 W Canopy Light	32	100	5000	\$	0.12 = \$	1,920.00	16000	1333	
Expansion ramp									
Two 52 W T5 fluorescent	86	103	5000	\$	0.12 = \$	5,314.80	44290	3691	
150 W Triple Light	2	150	5000	\$	0.12 = \$	180.00	1500	125	
70 W Wall sconce	8	70	5000	\$	0.12 = \$	336.00	2800	233	
100 W Canopy Light	4	100	5000	\$	0.12 = \$	240.00	2000	167	
Projected annual lighting cost						<b>\$ 25,018.80</b>	208490	17374	<b>\$ 1,393.20</b>

Option 3: Change design of new ramp and retrofit existing ramp

Existing ramp	# of fixtures	Draw (W)	Hours	Cost/Kwh			Kwh / year	Kwh / month	Total Annual savings
Two 52 W T5 fluorescent	201	103	5000	\$	0.12 = \$	12,421.80	103515	8626	
150 W Triple Light	8	150	5000	\$	0.12 = \$	720.00	6000	500	
70 W Wall sconce	15	70	5000	\$	0.12 = \$	630.00	5250	438	
100 W Canopy Light	32	100	5000	\$	0.12 = \$	1,920.00	16000	1333	
Expansion ramp									
Two 52 W T5 fluorescent	86	103	5000	\$	0.12 = \$	5,314.80	44290	3691	
150 W Triple Light	2	150	5000	\$	0.12 = \$	180.00	1500	125	
70 W Wall sconce	8	70	5000	\$	0.12 = \$	336.00	2800	233	
100 W Canopy Light	4	100	5000	\$	0.12 = \$	240.00	2000	167	
Projected annual lighting cost						<b>\$ 21,762.60</b>	181355	15113	<b>\$ 4,649.40</b>

# Connexus rebates

## Option 1: Stay with current lighting fixture (No rebates)

Existing ramp	# of fixtures	per fixture		
100W Metal halides	201	0 =	\$	-
Expansion ramp				
100W Metal halides	86	0 =	\$	-

## Option 2: Change design to include fluorescent in ramp expansion but leave existing ramp alone

Existing ramp	# of fixtures	per fixture		
100W Metal halides	201	\$ - =	\$	-
Expansion ramp				
Two 52 W T5 fluorescent	86	\$ 2.20 =	\$	189.20
			<b>\$</b>	<b>189.20</b>

## Option 3: Change design of new ramp and retrofit existing ramp

Existing ramp	# of fixtures	per fixture		
Two 52 W T5 fluorescent	201	\$ 13.00 =	\$	2,613.00
Expansion ramp				
Two 52 W T5 fluorescent	86	\$ 2.20 =	\$	189.20
			<b>\$</b>	<b>2,802.20</b>

# Total Cost Analysis

## Option 1: Stay with current lighting fixture (included in Contract)

Existing ramp	# of fixtures	per fixture		
100W Metal halides	201	0 =	\$	-
Expansion ramp				
100W Metal halides	86	0 =	\$	-
			\$	-

## Option 2: Change design to include fluorescent in ramp expansion but leave existing ramp alone

Existing ramp	# of fixtures	per fixture		
100W Metal halides	201	\$ - =	\$	-
Expansion ramp				
Two 52 W T5 fluorescent	86	\$ (29.77) =	\$	(2,560.00)
			\$	(2,560.00)
			\$	189.20
			<b>\$</b>	<b>(2,749.20)</b>

## Option 3: Change design of new ramp and retrofit existing ramp

Existing ramp	# of fixtures	per fixture		
Two 52 W T5 fluorescent	201	\$ 247.32 =	\$	49,711.00
Expansion ramp				
Two 52 W T5 fluorescent	86	\$ (29.77) =	\$	(2,560.00)
			\$	47,151.00
			\$	2,802.20
			<b>\$</b>	<b>44,348.80</b>