Rhys Carpenter Library: Return on Investment (ROI) w/ Smart Ideas Incentive

Light Bulb Model: T8				
# of T8:	527			
Cost = Cost of LED + Labor Cost				
Price of LED 6114 ($):	85.75			
		Cost of LED 6114($):		$45190.25
# of fixtures w/ bulbs <=4:		279	Watts (T8):	32
# of fixtures w/ bulbs >4, <=8:		2	Watts (LED 6114):	16
# of fixtures w/ bulbs >8, <=12:		2		
Time taken to change bulbs (mins):		7175		
in hours (hr):		119.58		
		Cost of Labor ($)		$4185.42
		Total Cost ($):		$49375.67
Annual Return = Energy Saving+ Labor Cost Saving				
Change in kW:		8.432		
Hours of operation:				
Academic Year:	3298			
Summer Break:	709.5			
Winter Break:	0			
Fall & Spring Break:	0			
Total Hour of Operation:	4007.5			
Change in kW-hr (kWh):		33791.24		
		Return on Energy Saving/Yr ($):		$3041.21
Frequency of changing T8/Yr		0.667916667	Life of T8 (hr):	6000
Frequency of changing LED/Yr:		0.08015	Life of LED 6114 (hr):	50000
Labor Cost/3 Yr: T8 ($)		8853.6		
Labor Cost/3 Yr: LED ($)		0		
Change in Labor Cost/3 Yr:		8853.6		
		Return on Labor Saving/3 Yr ($):		8853.6
		Total Return/3 Yr ($):		$17977.23
		Total Return/Yr ($):		$5992.41
# of Years to Breakeven = Cost/Annual Return				
		# of Years to Breakeven (Yr):		9.437
Smart Idea Incentive:				
Removal of 4-ft Lamp ($):		7.5		
Installation of LED (<18W) ($):		15		
		Total Incentive ($):		11857.5
		Total Cost–Total Incentive ($):		37518.16667
		Years to Breakeven (Yr):		6.26

Light Bulb Model: U-Shaped T8				
# of U-Shaped T8	226			
Cost = Cost of LED + Labor Cost				
Price of LED UTube ($):	100			
		Cost of LED UTube($):		226000
# of fixtures w/ bulbs <=4:		113	Watts (U-Shaped T8):	32
# of fixtures w/ bulbs >4, <=8:		0	Watts (LED UTube):	15
# of fixtures w/ bulbs >8, <=12:		0		
Time taken to change bulbs (mins):		2825		
in hours (hr):		47.0833		
		Cost of Labor ($)		1647.916667
		Total Cost ($):		24247.91667
Annual Return = Energy Saving+ Labor Cost Saving				
Change in kW:		3.842		
Hours of operation:				
Academic Year:	3298			
Summer Break:	709.5			
Winter Break:	0			
Fall & Spring Break:	0			
Total Hour of Operation:	4007.5			
Change in kW-hr (kWh):		15396.815		
		Return on Energy Saving/Yr ($):		1385.71335
Frequency of changing U-Shaped T8 (Yr):		0.200375	Life of U-Shaped T8 (hr):	20000
Frequency of changing LED (Yr):		0.08015	Life of LED UTube (hr):	50000
Labor Cost/3 Yr: U-Shaped T8 ($)		3796.8		
Labor Cost/3 Yr: LED UTube ($)		0		
Change in Labor Cost/3 Yr:		3796.8		
		Return on Labor Saving/3 Yr ($):		$3796.80
		Total Return/3 Yr ($):		$7953.94
		Total Return/Yr ($):		$2651.31
# of Years to Breakeven = Cost/Annual Return				
		# of Years to Breakeven (Yr):		9.146

Light Bulb Model: PAR38				
# of PAR38:	50			
Cost = Cost of LED + Labor Cost				
Price of LED 1666 ($):	82.15			
		Cost of LED 1666($):		4107.5
# of fixtures w/ bulbs <=4:		50	Watts (PAR38):	100
# of fixtures w/ bulbs >4, <=8:		0	Watts (LED 1666):	10
# of fixtures w/ bulbs >8, <=12:		0		
Time taken to change bulbs (mins):		1250		
in hours (hr):		20.83333		
		Cost of Labor ($)		729.16667
		Total Cost ($):		4836.6667
Annual Return = Energy Saving+ Labor Cost Saving				
Change in kW:		4.5		
Hours of operation:				
Academic Year:	3298			
Summer Break:	709.5			
Winter Break:	0			
Fall & Spring Break:	0			
Total Hour of Operation:	4007.5			
Change in kW-hr (kWh):		18033.75		
		Return on Energy Saving/Yr ($):		1623.0375
Frequency of changing PAR38 (Yr):		1.001875	Life of PAR38 (hr):	4000
Frequency of changing LED 1666(Yr):		0.08015	Life of LED 1666 (hr):	50000
Labor Cost/3 Yr: PAR38 ($)		840		
Labor Cost/3 Yr: LED 1666 ($)		0		
Change in Labor Cost/Yr:		840		
		Return on Labor Saving/3 Yr ($):		$840
		Total Return/3 Yr ($):		$6492.15
		Total Return/Yr ($):		$1903.03
# of Years to Breakeven = Cost/Annual Return				
		# of Years to Breakeven (Yr):		2.235
Smart Idea Incentive:				
Installation of LED (<18W) ($):		15		
		Total Incentive ($):		750
		Total Cost–Total Incentive ($):		4086.87
		Years to Breakeven (Yr):		1.88