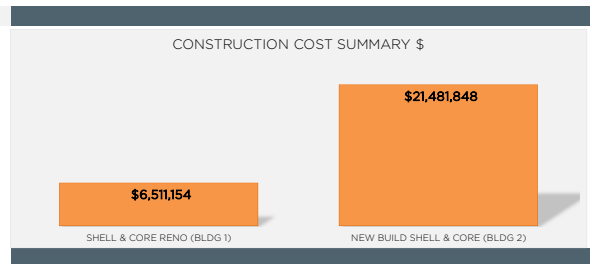


PROJECT SUMMARY

THE FOLLOWING IS A CONCEPTUAL COST MODEL. THE MODEL SHOWS ALL APPLICABLE CONSTRUCTION TYPES : NEW BUILD SHELL & CORE, SITE, AND ALL FITOUT TYPES. FITOUT COSTS ARE SHOWN BY SPACE TYPE AND BY LEVEL. THE CASHFLOW FORECAST AND ESCALATION ARE CALCULATED BASED ON A START DATE OF NOVEMBER 2018

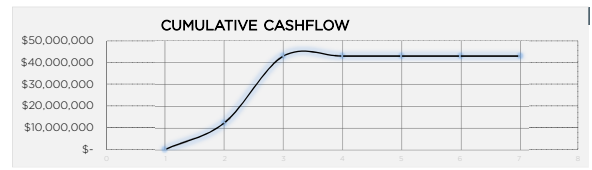
CAPITAL COST SUMMARY

BUILDINGS				
COST ELEMENT	GSF	\$/SF	CONSTRUCTION	PROJECT COST
SHELL & CORE RENO (BLDG 1)	68,910	\$ 94	\$ 6,511,154	\$ 8,236,610
NEW BUILD SHELL & CORE (BLDG 2)	67,733	\$ 317	\$ 21,481,848	\$ 27,174,537
TOTAL SHELL & CORE	\$ 205	\$ 27,993,002	\$ 35,411,147	
FIT OUT PROJECTS (COMBINED)	\$ 43	\$ 5,879,361	\$ 7,566,737	
TOTAL COSTS	\$ 248	\$ 33,872,363	\$ 42,977,885	
PROFESSIONAL TEAM			\$ 3,504,823	
OTHER FFE CLIENT COSTS			\$ 1,693,618	
OWNERS CONTINGENCY	10%		\$ 3,907,080	
TOTAL CAPITAL EXPEND			\$ 42,977,885	\$ 42,977,885



BUILDINGS CASHFLOW FORECAST

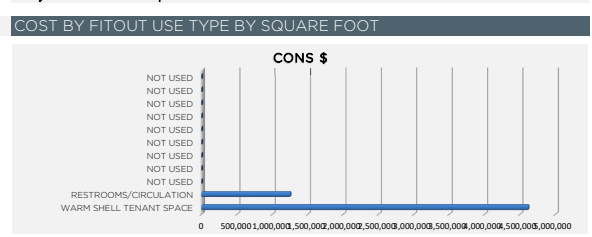
SPEND TOTALS	ANNUAL	CUMULATIVE
2017	\$ -	\$ -
2018	\$ 12,237,294	\$ 12,237,294
2019	\$ 30,740,591	\$ 42,977,885
2020	\$ -	\$ 42,977,885
2021	\$ -	\$ 42,977,885
2022	\$ -	\$ 42,977,885
2023 +	\$ -	\$ 42,977,885



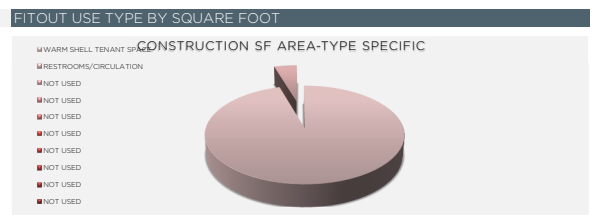
ALTERNATES	\$/SF	CONS \$	PROJECT \$
Front Façade - Metal panel in lieu of brick veneer	\$ 2.61	\$ 356,121	\$ 451,853
Front Façade - Fiber cement panels in lieu of brick veneer	\$ (0.55)	\$ (75,541)	\$ (95,848)
Front Façade - Terra cotta cladding in lieu of brick veneer	\$ 3.00	\$ 410,079	\$ 520,316
Rear Façade - EIFS in lieu of fiber cement	\$ (0.90)	\$ (122,973)	\$ (156,031)
Rear Façade - Metal panel in lieu of fiber cement	\$ 3.60	\$ 491,894	\$ 624,124
Rear Façade - LGMF rain screen in lieu of fiber cement	\$ 2.70	\$ 368,920	\$ 468,093
Add 7th Floor to New Building	\$ 17.89	\$ 2,444,258	\$ 3,101,320

CONTINGENCY & ESCALATION SUMMARY	
Design contingency	10.0%
Construction contingency	3.0%
Owners contingency	10.0%
Design build fee	0.0%
GL Insurance & Subguard	2.0%
Bond	1.5%
Escalation (annual):first 2 years	5%
Escalation following	3%
Escalation to start point	Nov-18
Project labor assumptions	Union

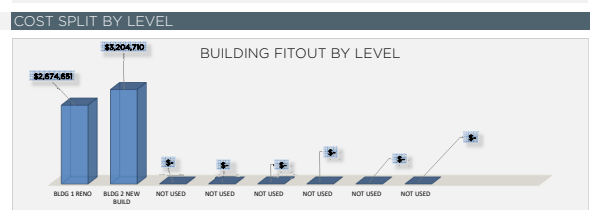
FITOUT USE TYPE BY COST	TOTAL \$	% MIX	CONS \$
WARM SHELL TENANT SPACE		79%	4,621,024
RESTROOMS/CIRCULATION		21%	1,258,337
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0
NOT USED		0%	0



FITOUT USE TYPE BY SQUARE FOOT	% MIX	OF TYPE	AREAS SF
WARM SHELL TENANT SPACE	95%		130,379
RESTROOMS/CIRCULATION	5%		6,264
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0
NOT USED	0%		0



BUILDING FIT-OUT COST \$	% MIX	CONS \$
BLDG 1 RENO	45%	\$ 2,674,681
BLDG 2 NEW BUILD	55%	\$ 3,204,710
NOT USED	0%	\$ -
NOT USED	0%	\$ -
NOT USED	0%	\$ -
NOT USED	0%	\$ -
NOT USED	0%	\$ -
NOT USED	0%	\$ -
NOT USED	0%	\$ -



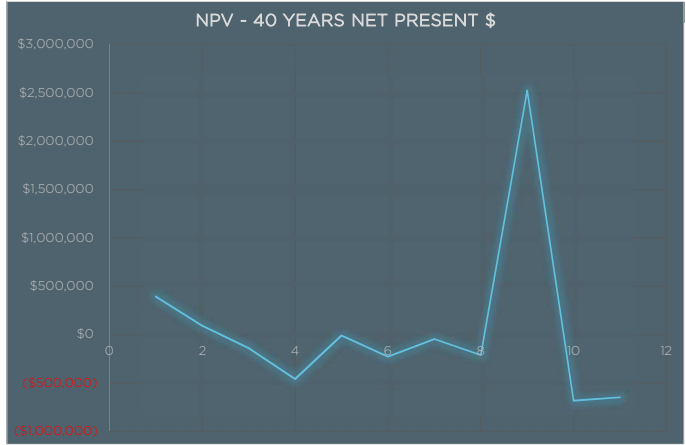
EXECUTIVE SUMMARY
EXAMPLE ACADEMIC PROJECT
EXAMPLE CLIENT

EXAMPLE ECM & LCC STUDY

The following study reviews a series of ECM'S for YYY as a part of the ZZZ study. It reviews ECM measures compared to baseline design metrics and delivers summary information for PAYBACK PERIODS & NPV over 10, 20 & 40+ year durations; reviewing capital costs, annual energy savings & annual maintenance.

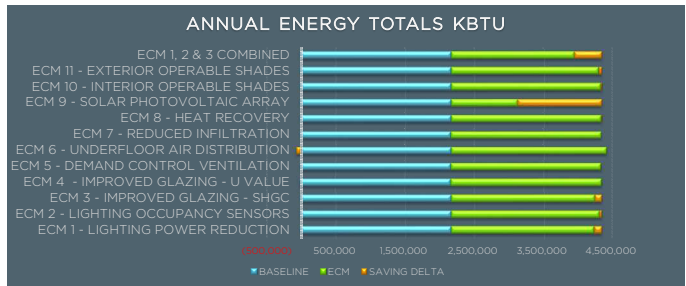
SUMMARY LEVEL RESULTS

ECM	SAVINGS ANNUAL	PAYBACK YEARS	NPV - 40 YEARS NET PRESENT \$
ECM 1 - LIGHTING POWER REDUCTION	\$6,302	6	\$392,599
ECM 2 - LIGHTING OCCUPANCY	\$1,930	7	\$91,493
ECM 3 - IMPROVED GLAZING - SHGC	\$5,677	No Payback	(\$138,011)
ECM 4 - IMPROVED GLAZING - U VALUE	(\$227)	No Payback	(\$459,121)
ECM 5 - DEMAND CONTROL VENTILATION	\$57	No Payback	(\$10,398)
ECM 6 - UNDERFLOOR AIR	(\$4,031)	No Payback	(\$227,552)
ECM 7 - REDUCED INFILTRATION	\$0	No Payback	(\$47,043)
ECM 8 - HEAT RECOVERY	\$511	No Payback	(\$212,893)
ECM 9 - SOLAR PHOTOVOLTAIC ARRAY	\$68,865	18	\$2,524,107
ECM 10 - INTERIOR OPERABLE SHADES	\$965	No Payback	(\$684,629)
ECM 11 - EXTERIOR OPERABLE SHADES	\$2,441	No Payback	(\$649,772)
ECM 12 & 3 COMBINED	\$22,504	20	\$814,562



ANNUAL ENERGY TOTALS - KBTU BY ECM

	BASILINE	ECM	SAVING DELTA
ECM 1 - LIGHTING POWER REDUCTION	2,166,000	2,055,000	111,000
ECM 2 - LIGHTING OCCUPANCY SENSORS	2,166,000	2,132,000	34,000
ECM 3 - IMPROVED GLAZING - SHGC	2,166,000	2,066,000	100,000
ECM 4 - IMPROVED GLAZING - U VALUE	2,166,000	2,170,000	(4,000)
ECM 5 - DEMAND CONTROL VENTILATION	2,166,000	2,165,000	1,000
ECM 6 - UNDERFLOOR AIR DISTRIBUTION	2,166,000	2,237,000	(71,000)
ECM 7 - REDUCED INFILTRATION	2,166,000	2,166,000	0
ECM 8 - HEAT RECOVERY	2,166,000	2,157,000	9,000
ECM 9 - SOLAR PHOTOVOLTAIC ARRAY	2,166,000	953,040	1,212,960
ECM 10 - INTERIOR OPERABLE SHADES	2,166,000	2,149,000	17,000
ECM 11 - EXTERIOR OPERABLE SHADES	2,166,000	2,123,000	43,000
ECM 1, 2 & 3 COMBINED	2,166,000	1,769,622	396,378
ANNUAL ENERGY TOTALS - KBTU	21,660,000	20,318,040	1,341,960

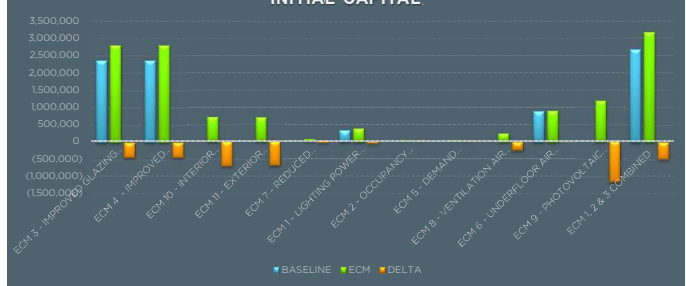


ANNUAL ENERGY TOTALS - KBTU

	BASILINE	ECM	DELTA
ANNUAL ENERGY TOTALS - KBTU	21,660,000	20,318,040	1,341,960

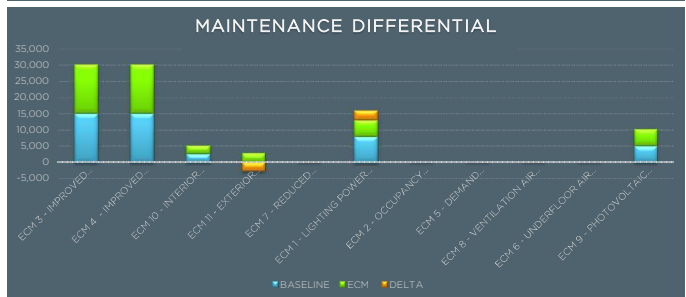
INITIAL CAPITAL COST SUMMARY

COST ELEMENT	BASILINE	ECM	DELTA
ECM 3 - IMPROVED GLAZING - SHGC	2,355,400	2,790,325	(434,925)
ECM 4 - IMPROVED GLAZING - U VALUE	2,355,400	2,790,325	(434,925)
ECM 10 - INTERIOR OPERABLE SHADES	0	705,110	(705,110)
ECM 11 - EXTERIOR OPERABLE SHADES	0	669,600	(669,600)
ECM 7 - REDUCED INFILTRATION	0	45,000	(45,000)
ECM 1 - LIGHTING POWER REDUCTION	305,760	352,800	(47,040)
ECM 2 - OCCUPANCY SENSORS	0	12,900	(12,900)
ECM 5 - DEMAND CONTROLLED	0	12,900	(12,900)
ECM 8 - VENTILATION AIR HEAT RECOVERY	0	232,000	(232,000)
ECM 6 - UNDERFLOOR AIR DISTRIBUTION	861,677	869,648	(7,971)
ECM 9 - PHOTOVOLTAIC ARRAY	0	1,168,000	(1,168,000)
ECM 1, 2 & 3 COMBINED	2,661,160	3,156,025	(494,865)
TOTAL CAPITAL COSTS	5,878,237	9,648,607	(3,770,370)



ANNUAL MAINTENANCE COST SUMMARY

	BASILINE	ECM	DELTA
ECM 3 - IMPROVED GLAZING - SHGC	15,000	15,000	0
ECM 4 - IMPROVED GLAZING - U VALUE	15,000	15,000	0
ECM 10 - INTERIOR OPERABLE SHADES	2,500	2,500	0
ECM 11 - EXTERIOR OPERABLE SHADES	0	2,500	(2,500)
ECM 7 - REDUCED INFILTRATION	0	0	0
ECM 1 - LIGHTING POWER REDUCTION	8,000	5,000	3,000
ECM 2 - OCCUPANCY SENSORS	0	0	0
ECM 5 - DEMAND CONTROLLED VENTILATION	0	0	0
ECM 8 - VENTILATION AIR HEAT RECOVERY	0	0	0
ECM 6 - UNDERFLOOR AIR DISTRIBUTION	0	0	0
ECM 9 - PHOTOVOLTAIC ARRAY	5,000	5,000	0
ECM 1, 2 & 3 COMBINED	23,000	20,000	3,000
ANNUAL MAINTENANCE TOTALS	\$45,500	\$45,000	\$500



CAPITAL REPLACEMENT SUMMARY

	% REPLACED	YEAR	VALUE
ECM 3 - IMPROVED GLAZING - SHGC	3.00%	10	(13,048)
ECM 4 - IMPROVED GLAZING - U VALUE	3.00%	10	(13,048)
ECM 10 - INTERIOR OPERABLE SHADES	5.00%	10	(35,256)
ECM 11 - EXTERIOR OPERABLE SHADES	5.00%	10	(33,480)
ECM 7 - REDUCED INFILTRATION	5.00%	10	(2,250)
ECM 1 - LIGHTING POWER REDUCTION	5.00%	10	(2,352)
ECM 2 - OCCUPANCY SENSORS	5.00%	10	(645)
ECM 5 - DEMAND CONTROLLED VENTILATION	5.00%	10	(645)
ECM 8 - VENTILATION AIR HEAT RECOVERY	5.00%	10	(11,600)
ECM 6 - UNDERFLOOR AIR DISTRIBUTION	5.00%	10	(399)
ECM 9 - PHOTOVOLTAIC ARRAY	5.00%	10	(58,400)
ECM 1, 2 & 3 COMBINED	3.00%	10	(14,846)

