

Installation of LED Lighting - various sites

Hudson House Car Park - Pay back calculation

Existing Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year
Existing fittings in area 1 & area 2	5ft florescent twins 70 watts per tube plus losing 10 watts per fitting through energy loss in starters	14.00	34	160.00	76.16	533.12	27,722.24	£ 767.44
Existing fittings communal walkway	Angled fluorescents 28 watts twin fitting	24.00	12	76.00	21.89	153.22	7,967.23	£ 220.56
Total							35,689.47	£ 988.00

Annual Saving

Proposed Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year	Fitting unit cost	New fittings	Labour to install	Total cost	Payback in Years
Proposed fittings area 1	Parkalux, textured white, LED Opal, 2000lm, 21 watts	14.00	9	35.00	4.41	30.87	1,605.24	£ 169.55		£ 2,205.00	£ 315.00	£ 2,520.00	
	Emergency lights	14.00	3	35.00	1.47	10.29	535.08	£ 56.52		£ 960.00	£ 105.00	£ 1,065.00	
Proposed fittings area 2	Parkalux, textured white, LED Opal, 2000lm, 21 watts	14.00	18	21.00	5.29	37.04	1,926.29	£ 203.45		£ 5,390.00	£ 630.00	£ 6,020.00	
	Emergency lights	14.00	7	21.00	2.06	14.41	749.11	£ 79.12		£ 2,240.00	£ 245.00	£ 2,485.00	
Proposed fitting area 3 communal walkway	Parkalux angled, textured white, LED Opal, 2000lm, 21 watts	24.00	4	21.00	2.02	14.11	733.82	£ 77.51	£ 255.00	£ 1,020.00	£ 280.00	£ 1,300.00	
		24.00	2	21.00	1.01	7.06	366.91	£ 38.75	£ 330.00	£ 660.00	£ 105.00	£ 765.00	
Total							5,916.46	£ 624.90				£ 14,155.00	39

£ 363.10

Factors to consider, the existing fittings are vandalised regularly (there is currently less than half of the lights working). They are not fit for purpose and produce very poor light, this is an income generating car park and should be maintained to a decent standard. We have antisocial behaviour and drug taking and requests by the police to upgrade security and lighting. The new fittings are robust vandal resistant by Design Plan lighting, they are double the cost but as proved in Ashley centre car park and Hook road car park, very durable & can last for over 10 years.

Bourne Hall - Pay back calculation

Existing Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year						
Existing High level Ceiling lights	Existing units with 2 triphos. Lamps @ 70 watts each	14.00	49	200.00	137.20	960.40	49,940.80	£ 5,274.75						
Proposed Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year	Fitting unit cost	New fittings	Labour to install	Hire of Cherry picker/tower	Total cost	Payback in Years
Proposed High level ceiling lights	Replace with LED. Fitting will need to be purpose made to fit existing opening	14.00	49	70.00	48.02	336.14	17,479.28	£ 1,846.16		£ 14,700.00	£ 4,900.00	£ 1,200.00	£ 20,800.00	6

£ 3,428.59

Banqueting suites calculation for spotlights and existing 2 D fittings does not work as the lights are not on long enough to equate a pay back situation, but under business continuity it would be wise to replace them at some point as they are tired looking and do not produce much light. No calculation carried out as lights are not on long enough

High Level Lights to reception area, foyer, café, museum and library are difficult to access and maintain. Works require tower scaffold or cherry picker. The pay back calculation does not equate but consideration must be given to the fact that the lights are 20 years old are not efficient, do not produce a good quality light and due to difficult access/height maintenance many lights are often out. This would be argued as business continuity rather than payback

Longmead Centre - Payback calculation

Existing Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year
Existing Dining Room Ceiling lights	600x600mm fluorescents with 4 tubes of 18 watts each	6.50	10	80.00	5.20	36.40	1,892.80	£ 199.92
Existing Dining Room Ceiling lights	600x600mm fluorescents with 4 tubes of 18 watts each	6.50	4	80.00	2.08	14.56	757.12	£ 79.97
Existing Dining Room Ceiling lights	300x600mm fluorescents with 2 tubes of 18 watts each	6.50	5	42.00	1.37	9.56	496.86	£ 52.48
Existing Dining Room Ceiling lights	3 5ft single fluorescents	8.00	3	67.00	1.61	11.26	585.31	£ 61.82
Corridor lights	600x600mm fluorescents with 4 tubes of 18 watts each	8.00	6	80.00	3.84	26.88	1,397.76	£ 147.63
Existing High level ceiling lights in main Hall	8ft twin fluorescents	4.00	8	120.00	3.84	26.88	1,397.76	£ 147.63
Total							6,527.61	£ 689.45

Proposed Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year	Fitting unit cost	New fittings	Labour to install	Total cost	Payback in Years
Proposed Dining Room Ceiling lights	New 600x600mm led lights	6.50	14	34.00	3.09	21.66	1,126.22	£ 118.95	£ 170.00	£ 2,380.00	£ 490.00	£ 2,870.00	
Proposed corridor lighting	New 600x600mm led lights	8.00	6	34.00	1.63	11.42	594.05	£ 62.74	£ 170.00	£ 1,020.00	£ 210.00	£ 1,230.00	
Dining Room 5ft replacements Ceiling lights	replace with 4ft single led	6.50	3	36.00	0.70	4.91	255.53	£ 26.99	£ 142.00	£ 426.00	£ 105.00	£ 531.00	
Proposed High level lights in main hall	replace with 4ft single led	4.00	16	36.00	2.30	16.13	838.66	£ 88.58	£ 142.00	£ 2,272.00	£ 560.00	£ 2,832.00	
Total								2,814.45	£ 297.26			£ 7,463.00	19

£ 392.18

The lights in general areas at Longmead centre does not equate for recommended 7 years payback under business case but consideration must be given to the fact that the lights are 20 years old are not efficient, do not produce a good quality light and due to maintenance many lights are often out. This would be argued as business continuity rather than payback.

Clocktower

Existing	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year
Clocktower	Clocktower Existing large floodlights	6.00	4	250.00	6.00	42.00	2,184.00	£ 230.67

Proposed Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year	Fitting unit cost	New fittings	Labour to install	Total cost	Payback in Years
Clocktower	Clocktower Existing large floodlights	6.00	4	50.00	1.20	8.40	436.80	£ 46.13		£ 1,900.00	£ 256.00	£ 2,156.00	12

£ 184.54

Clocktower flood lights are close to a 7 year payback, may be some more efficiencies by negotiation with manufactures and contractors.

Town Hall External Lights

Existing	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year
Existing fittings New Town Hall	Small square bulkhead lights(cover white) 20 watt socs	8.00	4	20.00	0.64	4.48	232.96	£ 24.61
Existing fittings New Town Hall	Big square bulkheads(cover black)	8.00	12	80.00	7.68	53.76	2,795.52	£ 295.26
Existing fitting Old Town Hall	Big lights(white covers)	8.00	3	250.00	6.00	42.00	2,184.00	£ 230.67
Existing fitting Old Town Hall	Small square bulkhead lights(cover white) 20 watt socs	8.00	7	20.00	1.12	7.84	407.68	£ 43.06
Total							5,620.16	£ 593.60

Proposed Lighting	Type of fittings	Light on hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year	Fitting unit cost	New fittings	Labour to install	Total cost	Payback in Years
Proposed lights	Talos design plan fitting 2000lm	8.00	23	15.00	2.76	19.32	1,004.64	£ 106.11		£ 5,980.00	£ 805.00	£ 6,785.00	
Proposed lights	Talos design plan 3000lm for high level areas	8.00	3	29.00	0.70	4.87	253.34	£ 26.76		£ 780.00	£ 105.00	£ 885.00	
Total							1,257.98	£ 132.87				£ 7,670.00	17

£ 460.73

Town Hall lights are a mixture of Soc & Son lighting, these are no longer manufactured and require replacing. New LED lights will last longer with better quality light and provide added security and safety for the staff and public around the Town

Ashley Centre Car Park

Existing Lighting	Type of Fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year	Fitting cost	Labour to install	Total cost
Existing Roof level lighting - Levels 5B, 5A, & 4C	Existing column lights Twin Son 80 watts	12.00	9	200.00	21.60	151.20	78,624.00	£ 8,304.27	£ 8,500.00	£ 4,500.00	£ 13,000.00

Existing lighting no longer made, parts difficult to obtain.

Proposed Lighting	Type of fittings	Light On hours/day	Number of Fittings	Watts per Hour	kw/day	kw/wk	kw/year	£/year	Columns, arms & brackets	New fittings	Labour to install	Lifting equipment	Total Cost
Proposed Roof level lighting - Levels 5B, 5A, & 4C	New metal tubular columns 168/114mm with 0.5m double arm bracket, single door, flange plated. With new XSPC024Mef40k+24 sv	12.00	9	272.00	29.38	205.63	106,928.64	£ 11,293.80	£ 26,185.71	£ 5,101.38	£ 7,729.50	£ 8,500.00	£ 47,516.59

-£ 2,989.54

Type of fittings	Cost of fittings
Metro tube double arm bracket	£ 3,229.50
LED light x 18	£ 5,101.38
Columns x 9	£ 22,956.21
Total	£ 31,287.09

Ashley car park - This project has been carefully designed to meet the lighting levels required at the top of the car park by CRE lighting company. The proposal is to remove the old Sodium lighting which is over 20 years old. The replacement columns have to be of increased height to provide the correct spread and lumination levels. This will mean planning permission is required for columns, lighting equipment will be required to get the columns up to the top level and fixed in place. There is limited lifetime left in these old fittings, the Facilities contractor has advised that they may last for another two years, but do need replacing before parts are unavailable.

	Cost	99,760.59
Contingency @	0%	239.41
	Total	100,000.00

	Cost	Payback - Years	Annual Saving
Hudson Hse	14,155.00	38.98	363.10
Bourne Hall	20,800.00	6.07	3,428.59
Longmead Social Centre	7,463.00	19.03	392.18
Clocktower	2,156.00	11.68	184.54
Town Hall External Lights	7,670.00	16.65	460.73
Ashley Centre Car Park	47,516.59	n/a -	2,989.54
	99,760.59		1,839.61
Projects that payback	20,800.00	6.07	3,428.59