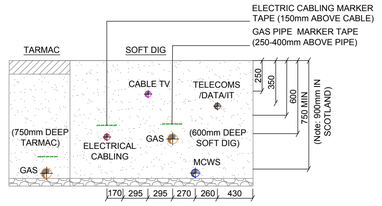
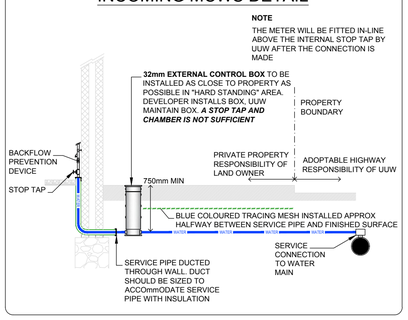
SERVICE TRENCH DETAILS

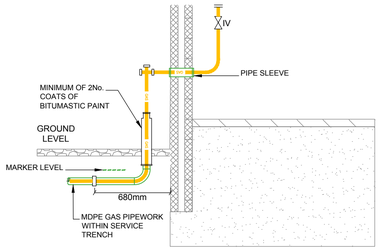


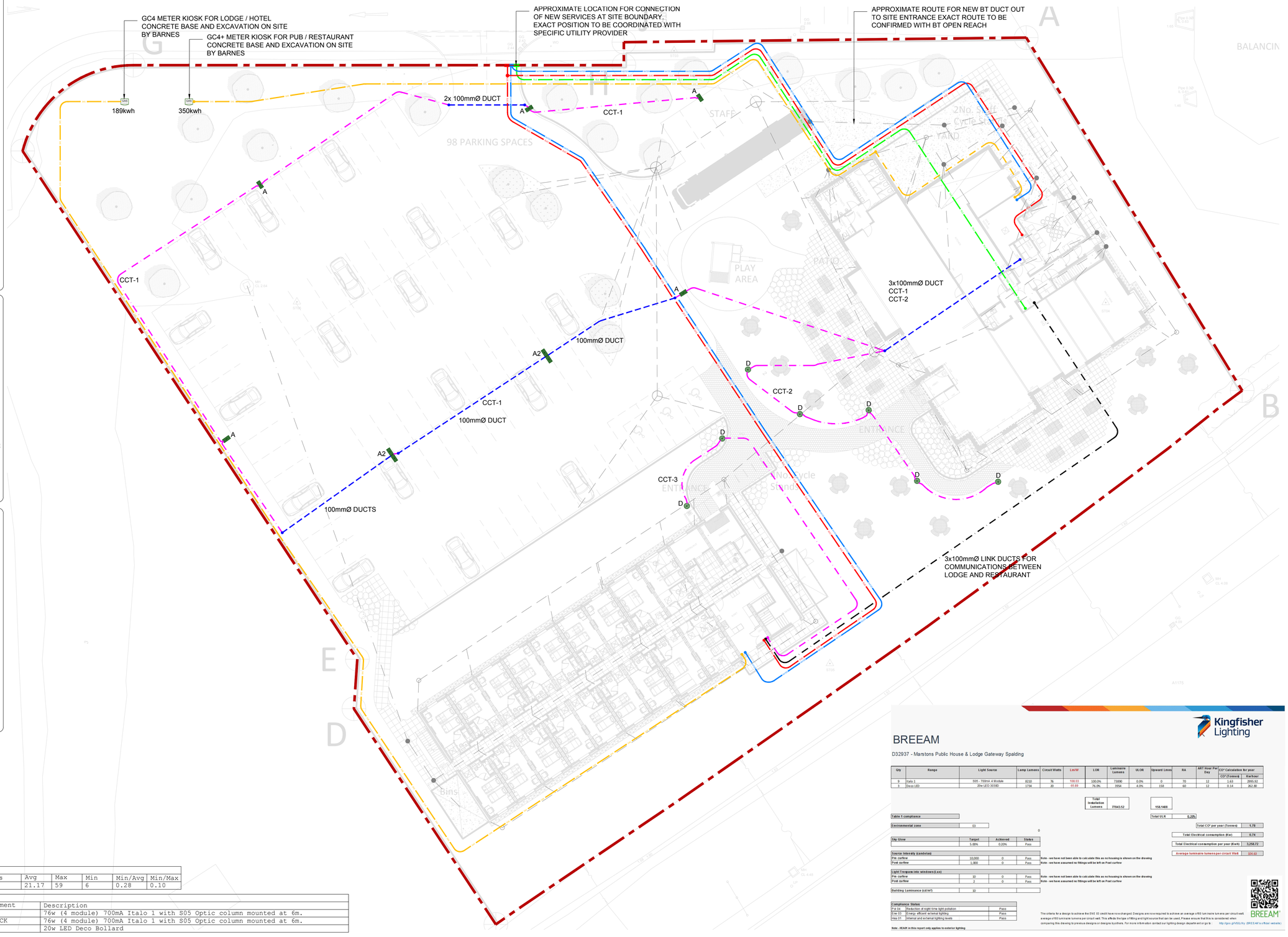
1. ONLY SLOW, EASY BENDS SHALL BE USED FOR CABLE ENTRIES. EXTREME CARE SHALL BE TAKEN WHEN DIGGING TRENCH ESPECIALLY WHEN NEARING OTHER SERVICES.
2. DUCT ROAD CROSSINGS SHALL BE INSTALLED WHICH SHOULD EXTEND APPROXIMATELY 150MM BEYOND THE CURB LINES. DUCTS SHALL BE TWIN WALLED BLACK POLYETHYLENE AND THE ENDS SHALL BE BLANKED OFF TO PREVENT THE INGRESS OF SPOIL.
3. MAIN CONTRACTOR TO INSTALL DRAW WIRES WITHIN DUCTS SUITABLY TIED OFF AND MARKED
4. TRENCHES SHALL BE ADEQUATELY PROTECTED AGAINST WATER INGRESS, DAMAGE OR COLLAPSE AND AGAINST ACCESS FROM STAFF.
5. ROAD EXCAVATION SHALL BE PLATED.
6. MAIN CONTRACTOR SHALL 'BLIND' THE CABLE TRENCH WITH SUITABLE MATERIAL WHICH SHALL BE FREE OF SHARP STONES, ROCKS, ETC AS REQUIRED AND ALSO INSTALL WARNING TAPES.

INCOMING MCWS DETAIL



INCOMING GAS DETAIL





Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Min/Avg	Min/Max
Car Park	Illuminance	Lux	21.17	59	6	0.28	0.10

Luminaire Schedule				
Symbol	Qty	Label	Arrangement	Description
	5	A	SINGLE	76w (4 module) 700mA Italo 1 with S05 Optic column mounted at 6m.
	2	A2	BACK-BACK	76w (4 module) 700mA Italo 1 with S05 Optic column mounted at 6m.
	3	D	SINGLE	20w LED Deco Bollard

BREEAM

Kingfisher Lighting

D32937 - Marstons Public House & Lodge Gateway Spalding

Qty	Range	Light Source	Lamp Lumens	Circuit Watts	LmW	LOR	Luminaire Lumens	ULOR	Upward Lmns	RA	ART Hour Per Day	CO² Calculation for year	
												CO²(Tonnes)	Kwh/our
9	Italo 1	S05 - 700mA 4 Module	8230	76	108.03	100.0%	73890	0.0%	0	70	12	1.63	2955.52
3	Deco LED	20w LED 3030D	1734	20	85.89	76.0%	3954	4.0%	158	60	12	0.14	262.80

Total Installation Lumens 77843.52

156.1468

Table 1 compliance — Total ULR 0.20%

Environmental zone E3

Total CO² per year (Tonnes) 1.78

Total Electrical consumption (Kw) 0.74

Total Electrical consumption per year (Kwh) 3,258.72

Average luminaire lumens per circuit Watt 104.40

Sky Glow	Target	Achieved	Status
	5.00%	0.20%	Pass

Source Intensity (candelas)				
Pre curfew	10,000	0	Pass	Note - we have not been able to calculate this as no housing is shown on the drawing
Post curfew	1,000	0	Pass	Note - we have assumed no fittings will be left on Post curfew

Light Trespass into windows(Lux)				
Pre curfew	10	0	Pass	Note - we have not been able to calculate this as no housing is shown on the drawing
Post curfew	2	0	Pass	Note - we have assumed no fittings will be left on Post curfew

Building Luminance (cd/m²)	10		

Compliance Status:		
Pol 04	Reduction of night time light pollution	Pass
Ene 03	Energy efficient external lighting	Pass
Hea 01	Internal and external lighting levels	Pass

The criteria for a design to achieve the ENE 03 credit have now changed. Designs are now required to achieve an average of 60 luminaire lumens per circuit watt, average of 60 luminaire lumens per circuit watt. This affects the type of fitting and light source that can be used. Please ensure that this is considered when comparing this drawing to previous designs or designs by others. For more information contact our lighting design department or go to ... http://goo.gl/VGGJRy (BRE Ltd's official website)

Note - HEA09 in this report only applies to exterior lighting

BREEAM

NOTES

- ROUTE OF INTER CONNECTING LINK DUCTS TO EXISTING PUB / RESTAURANT 4x100mmØ WITH DRAW-ROPES FOR FIRE ALARM AND CCTV
- GAS — PROPOSED 125mmØ YELLOW MDPE (PUB / RESTAURANT) AT A DEPTH OF NOT LESS THAN 600mm BELOW GROUND IN A PREPARED TRENCH. TRENCH TO BE BACK-FILLED WITH SELECTED FILL AND PIPEWORK RISE TO H/L AND/OR L/L EXTERNALLY BEFORE ENTRY INTO THE PLANTROOM WARNING TAPE IS TO INSTALLED AT 150mm ABOVE THE SERVICE PIPEWORK DURING BACKFILL
- GAS — PROPOSED 90mmØ YELLOW MDPE (LODGE / HOTEL) AT A DEPTH OF NOT LESS THAN 600mm BELOW GROUND IN A PREPARED TRENCH. TRENCH TO BE BACK-FILLED WITH SELECTED FILL AND PIPEWORK RISE TO H/L AND/OR L/L EXTERNALLY BEFORE ENTRY INTO THE PLANTROOM WARNING TAPE IS TO INSTALLED AT 150mm ABOVE THE SERVICE PIPEWORK DURING BACKFILL
- WATER — 63MMØ BLUE PE/AL/PE PROTECTALINE PIPEWORK FROM EXTERNAL METER AT A DEPTH OF NOT LESS THAN 760MM BELOW GROUND IN A PREPARED TRENCH TRENCH TO BE BACK-FILLED WITH SELECTED FILL AND SLEEVED AT THE PIPEWORK ENTRY INTO THE PLANTROOM WARNING TAPE IS TO INSTALLED AT 150MM ABOVE THE SERVICE PIPEWORK DURING BACKFILL ALL BELOW GROUND VALVES TO BE LOCATED IN INDIVIDUAL ACCESS CHAMBERS ALL ABOVE GROUND EXTERNAL VALVES TO BE TRACE HEATED AND PROVIDED WITH INDIVIDUAL INSULATION COVERS ALL ABOVE GROUND PIPEWORK TO BE TRACE HEATED AND PROVIDED WITH THERMAL INSULATION AND WEATHERPROOF COVERING

- WATER — WATER SUPPLY
- TELE — 100mm DUCT COMMUNICATIONS
- ELEC — ELECTRIC SUPPLY
- GAS — GAS SUPPLY
- DUCT LV (HARD DIG)
- DUCT LV (SOFT DIG)

REV	DATE	DRWN BY	CHKD BY	AMENDMENTS
D4	16/04/18	JJB	AJK	AMENDMENTS MADE
D3	06/04/18	JJB	AJK	AMENDMENTS MADE
D2	15/03/18	JJB	AJK	AMENDMENTS MADE
D1	02/03/18	JJB	AJK	AMENDMENTS MADE

DESIGN

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CLIENT TITLE: MARSTON'S PUBS AND TAVERNS

DESIGNED BY: AJK

DRWN BY: JJB

CHECKED BY: AJK

SCALE: 1:200@A1

DRAWING TITLE: Mechanical & Electrical Site Layout Combined Services Layout

PROJECT TITLE: Marston's Projects Public House & Lodge Spalding - England

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DRAWING TITLE: 351-36-ME-100

REV: D4