

**ENGINEERING BOARD
STREET LIGHTING GROUP**



21st January 2021

NOTES OF MEETING

In attendance

Keith Tovee	(KT)	East of England	Chair
Sue Kinsella	(SK)	South East	Vice Chair
Peter Harrison	(PH)	ILP	Secretary
Graham Smith	(GS)	HEA	
Dean Wendelborn	(DW)	London	
Ian Moore	(IM)	Yorkshire	
Ken Pitt	(KP)	South West	
Rob Baines	(RB)	Midlands	
Jonathan Hurley	(JH)	Wales	
Sarah England	(SE)	City of London	
Simon Langley	(SL)	Highways England	
Felicity Lockett	(FL)	Transport for London	
Trevor Scott	(TS)	Northern Ireland	

Item 1 Attendance and Apologies

Apologies were received from Hannah Bartram, Darren Hubbard and Gary Wilson. The chairman reported that Ron Parker from Lancashire will be the representative for the North West.

Item 2 Notes and any O/S actions from previous meeting

RB is representing ADEPT on BSI.

Item 3 Health and Safety Issues plus Safety Alerts Distribution

SL updated on two safety alerts, issued by Highways England (HEi 180 & HEi 182) relating to a flashover occurring when working on or near DNO supplies. There is no specific action to be taken other than wearing flash guards on their helmets and usual PPE.

<http://www.highwaysafetyhub.com/alerts---highways-england.html>

GS reported that in Essex, contractor operatives use a thermal sensitive device to detect hot spots before the asset door is removed. He will distribute details of the heat sensitive device and information about suitable PPE to the group.

ACTION: GS to distribute details

DW reported on an alert where a column with electric vehicle charger attached had become live when a badly positioned internal cable became trapped between the door and the column base.

PH had distributed details of a car battery charger being connected into the base of a lighting column in Lambeth that had been forwarded by LoLEG

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Item 4 DNO Issues and charges

GS reported a local authority informed him that certain DNO's charging for cut-out replacements and charging for disconnection following RTC. **SK** reported that their DNO in Kent UKPN charge for disconnections but allow an ICP to carry out cut-out changes and most cut out changes, the same arrangements were in place for IDNO's. **GS** reported he had a document produced by an IDNO where they were cover the cost of cut out changes and accident damage disconnection. The consensus was that cut-out changes due to wear and tear needed to be challenged with the DNO often refusing to accept the cost. **RB** reported that Western Power Distribution, Electricity North West and Northern Powergrid charged for emergency attendance. All 3 will replace deteriorated cut-outs at their cost but will charge for vandalism. Similar arrangements were reported from others.

RB reported that there were some instances where older DNO mains cables that were not suitable for transfer of supply to new lighting had been waiting over 1 year. The reason seems to be that the main cable needs to be replaced and there are currently no available funds for this work to be done. **PH** suggested this was a breach of their standards of service and that OFGEM would be interested in understanding why.

Item 5 Regional Reports

East of England (KT)

Essex and Suffolk have large LED replacement programmes that are due to start in April after going through tendering processes. Suffolk have been giving an update of their Live Lab project, using sensors on the network to assess usage and assist future service delivery planning. Absences due to Covid illness or isolation requirements has started to affect repair times during the busiest time of the year. Also receiving requests for immediate action to install Covid vaccine centre direction signs and information boards. Norfolk has an adaptive dimming trial set up based on traffic count information. Scheme costs and saving are being assessed to understand the cost benefit.

Yorkshire and Humberside (IM)

Relatively quiet just now. No real issues identified from consultation with the group. LED conversions and their deployment are the main issue. Some complaints are being received regarding the lack of surround light following the lighting replacements. Anticipated energy and carbon are being realised.

South West of England (KP)

Meeting held early December. Most were trying to deliver work programmes and dealing with Covid related operational issues. Some contract difficulties were reported especially from some large construction companies that had a lighting arm; they appear to be more commercially active.

Colour temperature for LED's was discussed and the pressure that is being exerted for warmer colour temperatures to be installed.

Gloucestershire have all but completed their LED replacements. Other authorities in the region are also delivering replacements as well.

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Midlands (RB)

In Derbyshire, a lot of work requiring immediate attention pertaining to Covid vaccine centre and testing site direction signage. Public health team wants to install banners on lighting columns. Final 12 months LED roll-out about to start.

Derbyshire and Nottinghamshire report water ingress in photocells of products from one manufacturer from whom a large number are currently in use. This is being investigated by the manufacturer.

Small cell telecoms sites are becoming an issue for Derby to agree within their PFI project.

Worcestershire are asking about techniques to access columns on footpaths.

London (SE/DW)

LoLEG had meeting 11th November. Discussion around EV column mounted chargers and a sliding mechanism where there is little space in the column base for additional apparatus. This consists of a piece of plastic attached to the top of the backboard with a tray that slides into the column shaft. Concern has been expressed as it may obstruct access to lighting cables going up the shaft and its general construction that appears flimsy. A more substantial version has now been produced, but there remain concerns regarding its deployment.

Southwark are trialling an EV induction pad for contactless vehicle charging. However, it is 400kg and needs to be fitted flat so could be an issue on roads with a camber and concern has been expressed regarding possible settlement of the device and damage during subsequent road major maintenance.

There are discussions regarding the use of a 'safe-volt' system that would avoid the conversion of PME supplies to TT. This is ongoing between the suppliers and DNO.

Some nuisance tripping has been reported at shared EV/lighting sites. This is being investigated to understand why it is happening.

Freeform delivered a presentation of a system under development called column checker. This is based on inventory information, attachments, previous structural inspection and testing, will calculate residual life and then recalculate with another attachment to give an idea of the effect on residual life.

Monthly newsletter has been started called Highlights.

£200m lighting backlog in London has been identified.

Wales (JH)

Meeting the previous day with all-Wales lighting group, well attended. All working more or less back to normal with some home working. Discussion about the unmetered supplies agreement issues and contents. Dark Skies Wales carrying out a survey across Wales looking at what equipment is being used, especially in Areas of Outstanding Natural Beauty and then encourage authorities to use equipment less likely to damage appreciation of these areas.

A common issue has been reported of failures of lantern attachments where there has been a chemical reaction between the stainless steel grub screws in aluminium alloy lantern base causing the grub screws to seize. This seems to be a problem with a number of manufacturers, though some were now using stainless steel castings for the lantern base to eliminate this. This issue was confirmed by **SL** based on the trunk road and motorway network.

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Report of some lanterns flashing on and off from a particular overseas manufacturer. It would appear this was due to faulty CMS GPS lantern nodes for a single night that has subsequently been resolved. This was also noted as happening with an authority in Gloucestershire.

North East (DH)

Submitted by **DH** prior to the meeting. Group met in September:

Cumbria

We're just replacing the last of our 45,000 lights to LED. Headline figure is that we've knocked over £1m (more than halved) off our annual baseline (2014) figure, more if you factor in increased energy costs. We use over 10 million less kWh annually and have reduced our carbon emissions by over 9000 tonnes annually.

Should add we also dim the life out of them, 50% 9pm to 6am and trim, 20/20 main roads, 10/10 residential and are trialling 5/5 on rural residential. Not a single complaint.

There is a but though, we spent approximately £13m of prudential borrowing to do this, our annual interest is quite high and "eating" into our "savings". I advised against prudential borrowing but was informed alternatives are not in the council's current "borrowing portfolio".

My advice is that if you are looking at a LED programme and haven't sorted your finance stick out for an alternative funding with a profit share payback.

Gateshead

We should complete the 4th Phase of our Invest to Save (ITS) Project this summer.

All main road lantern will be LED (Thorn CiviTEQs) – total: 10,000.

Currently removing Harvard/Zodion CMS from residential areas – these are 98% LED (Axias) – total: 22,000.

We have a few hundred lanterns yet to swap out to LEDs, including decorative lanterns.

Everything but Traffic Signals is HH trading. Traffic signal inventory to be HH before April.

EV charging is being investigated by Transport Strategy at the Civic. No involvement as yet.

Lockdown has affect our delivery of the ITS project.

Northumberland

We issued completion on our Street Lighting Modernisation Project in March 2020, and the headline figures are as follows:

- replaced circa 18,000 life expired columns and fitted with new LED luminaire.
- converted circa 26,500 existing columns with new LED luminaire.
- installed over 800 new columns in previously unlit areas fitted with new LED luminaire.
- reduced energy consumption from 20.54MkWh to 6.85MkWh - a reduction of 13.7MkWh giving an energy reduction of 67%.
- over the life of the project, the conversion to LED has saved 6,675 tons of CO2.
- we have an overall fixed dimming regime - 50% dim at midnight to 6am.

As far as issues go there have been many, and still getting the odd complaint.

The main ongoing issue we do have is with the coating failing on the Thorn R2L2 luminaire, which was our main project luminaire. It would be interesting to know if any other ADEPT Members are having any similar issues with this luminaire. **ALL**

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South Tyneside

- We have a PFI (2005 to 2031), so changes need quite involved deeds of variation etc., taking months.
- Around 2013 we fitted Philips CMS to around 4000 no. 250W columns, allowing a 20% dim
- In 2014/15 the inventory was moved from unmetered to virtual HH. The peak band charges almost outweighed the dimming savings (literally to within a few £).
- We remain on virtual HH, administered by PDA (very good; inventory is spot on; data reports useful for capital bids etc.);
- Our focus now is reducing consumption with LED conversions, starting with the high power fittings on main roads
- We've borrowed about £1m p.a. to fund LED replacements at PWLB rates, 2.78% was last rate I heard quoted
- Early phases easily achieved 4 to 5yr payback, now we down at ~90W Cosmo and below the paybacks are longer, in some cases much longer (we've about 9000 residential 60 or 45W fittings...)
- Early projects removed the CMS fittings entirely, replacing with R2L2. One or two issues with flaking coating, but certainly not across the board
- Last few schemes have used Thorn Civiteq; the regional manufacture has helped the capital bid process. Everyone knows someone who worked at Thorn's it seems.
- In some cases, the existing fittings are over lit for the road class. Balfour design engineers have used simulation software to "tweak" the lantern to suit the application. Many of the 250W CMS fittings are now circa 86W, some cases of 90W down to 24W etc. New estates seem particularly over lit.
- About 36% of stock is LED, energy is down 27% from 10,048MWh in 2015/16, the first full year of HH.

ALL: Has anyone used peak lopping batteries? This seems to fall on deaf ears with electricity suppliers

Redcar and Cleveland

We currently have 24,380 assets under the PFI arrangement, minor flux with accrual/de accrual. We replaced/upgraded circa 15,500 to LED between Sept 2019-Aug 2020. We have a few heritage outstanding. This was funded part SALIX / part capital -circa 4m total.

RCBC have now engaged with PDA who have begun profiling our inventory to go live with HH data April 2021, Early signs are our previous electricity cost which was close to £1mil annually will reduce to circa 600k.

With dimming and the EAC calculated may be closer to 450k saving. We are in the process of reconciling with the supplier.

A recent T/A health check of the project has triggered improved reporting and accountability, which in turn should help us identify and execute further initiatives.

Current carbon management initiatives are looking at PV battery charging / PV solar farm/ we currently have a small fleet of electric vehicles and mains fed charge points.

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Due to some staffing/resource issues, continuity has been affected but now resolved.

Durham

6 year Street Lighting Energy Reduction Project completed in March 2019. The project involved:

- retrofit of 59,881 existing street lights with more energy efficient LED street lights, dimmed 25% between 10pm and midnight and by 50% between midnight and 5am;
- removal of 2,151 street lights not required by the Street Lighting Policy where safe to do so following an independent Road Safety Audit; and
- De-illumination of 1,168 signs where permitted under Department for Transport regulations.

The project has achieved a 69.57% reduction in annual energy consumption which is saving 8,413 tonnes in carbon emissions and £2.871m in revenue. The project has been the biggest single contributor to date to the Council's reduction in carbon emissions.

£9.4m budget recently allocated over the next 3 years to continue LED retrofits.

DCC have produced a Climate Change Action Plan that includes a target for all Street Lights to be LED by 2030 and various other measures including EV charging. The plan can be found in item 7 on the following link:

<https://democracy.durham.gov.uk/ieListDocuments.aspx?CId=154&MId=11270&Ver=4>

Discussions ongoing with UMSO and Power Data Associates regarding move to HH trading.

City of London (SE)

City have adopted 2700K LED lighting as a preferred source, nearing the end of LED replacements. Lighting strategy favours dimming and warmer colour temperatures. Challenges expected when replacing the specialist lanterns in Barbican.

Highways England (SL)

Still carrying out maintenance, though night scouting is not all being done due to Covid. Feasibility studies are being completed, particularly M66 area for trans-Pennine works. Smart motorways work is continuing. Most 'quick-win' LED replacement schemes are complete, so a large investment is now needed to replace the remaining stock that is not feasible for just luminaire replacement. DNO issues are not a great problem for HE, the main problem is getting wayleaves to cross farmland.

Sign lighting risk assessment for illumination is being carried out due to height of direction signs above the throw of headlights.

Some LED flickering issues have been reported with either some individual LED's or arrays. Cracked lenses have been found. Investigating if this is due to manufacturing or installation issues. Suggesting revisited the interface document for equipment ownership abutting HE roads. This would then be used to confirm ownership boundaries and asset management. **KP** raised the issue of shared kiosks and pillars as these should be separated. **RB** reported segregation and ownership

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issues with the transfer of assets related to subways and A38 corridor work. The main issue is the alignment of available funds aligning so HE and authorities can work together.

Northern Ireland (TS)

No reported issues regarding photocell faults or seized grub screws. We are planning to replace 30,000 lanterns with LED and 6,000 columns in 2021. However, this has been reduced to 11,000 lanterns and 4,000 columns. Had been set a target of 2% energy reduction but are achieving 4% so far. There are over 32,000 time expired columns and it look as though there could be reduced funding available next year so the programme will need to be amended.

South East of England (SK)

Last meeting 14th October, quite short as there were not many agenda items. Discussed ADEPT Regional changes and issues concerning 5G roll-out. There is little consensus in this region regarding an approach so guidance is needed.

Item 6 Membership and Representation

KT announced the new North West member would be Ron Parker and Gary Wilson is the new chair of SCOTS.

Item 7 5G Installations

DW reported that has forwarded some information to ILP for consideration for inclusion into their 'The Humble Lamp Post' guidance note. The Telecommunications Act includes street lighting as part of the highway so confers a right for them to be used to host telecommunications equipment. The codes allow for inspections and tests to ensure suitability, but it also seems to favour the telecommunications companies and allows compensation payments. If the local authority has an asset valuation and strength assessment, it would be for a court to decide if the Telecoms Co disputes this.

IM reported there had been an approach in Leeds that has resulted in a project group being formed in the authority with legal support. There is an expectation in the authority for this work to be progressed.

KP enquired regarding possible health concerns regarding this equipment. Such an approach would have to be dealt with by the Telecom Co. **DW** responded that it would be for the local authority to be satisfied that attached equipment is compliant with current Standards and recommendations.

PH reported ILP was approaching the final draft of the guidance note for this situation. The fundamental issue was that this should be street lighting with an attachment not telecom equipment with a street light attached. That would ensure issues around access and maintenance of the electrical supply. The position must be for the Telecom Co to demonstrate to the reasonable satisfaction of the local authority asset owner that their proposals will not compromise the structural or electrical integrity of the asset. That would, it is hoped, be in line with the guidance note contents. Outside the scope of the guidance note will be a legal agreement, this was reported to UKLTB and for there to be advice on the issues and a possible draft document covering issues such as:

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- Safety of apparatus
- Access arrangements
- Competence of telecoms operatives
- Communication including response to public enquiries
- Emergency arrangements and collection after vehicular damage
- Safety of equipment for operatives
- Energy payments
- Notice periods for replacements
- Suitable rental payments

GS reported HEA had been in discussion with BT and they are aware of the issues. Their response is that they will be reluctant to use the Telecommunications Act unless they are forced to, they would much prefer to negotiate. It is claimed their contractors are HERS registered. Negotiating with other operators.

SL reminded the group that if extra low voltage is used for telecoms apparatus then there must be suitable segregation for compliance with BS7671.

Item 8 ADEPT Corporate Update/Information

KT reported that there was a live-labs online meeting that was very interesting.

Item 9 National Meeting Feedback

i) UMSUG

SK meeting 16th December, new charge codes for festive lighting were discussed and it seems the arrangements with parish councils would remain the same. There was a discussion regarding CMS and billing if there were no event logs. The local authority representatives wanted there to be an arrangement where the planned events would be accepted in lieu of the actual events. This will be further investigated.

ii) HEA

GS details of an infra-red thermometer were distributed, other types and makes are available. This is being used to ascertain any hot spots after removing the asset door as an indicator of possible supply fault. The device is passed over the area and if there is a difference of more than 3 degrees between the backboard area and the cut out then there is likely to be a fault, so the door is replaced and the DNO informed. Though there have been ups and downs over the last year, most if not all HEA members, are currently very busy. Training continues to be delivered using a blended approach of face-to-face and remote delivery. No arrangements yet for in-person conferences and exhibitions for the current year, except the Celtic Manor event at the end of October.

iii) Lighting Column Technical Forum

GS reported the next meeting is arranged in one week's time.

iv) BSI

RB said there was nothing of significance to report

v) ILP

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PH Delivering online training through the new platform. Keeping in touch with members and the wider community through online meetings and webinars. Document nearing completion include working near overhead lines, surge protection devices, GN01 obtrusive light 2021 version, working with Bat Conservation Trust on updating that guidance note, PLG04 light impact assessments is making good progress and a PLG about protection of minor structures is about to go to the publisher. Live labs work to appear in Lighting Journal as will a separate article about dynamic dimming.

Item 10 ADEPT Engineering Board

<https://www.adeptnet.org.uk/groups/engineering>

Item 11 UKLTB

<http://www.ukroadsliasongroup.org/en/UKRLG-and-boards/uk-lighting-technology-board/uk-lighting-board-minutes.cfm>

Item 12 UMSUG

<https://www.elexon.co.uk/group/unmetered-supplies-user-group-umsug>

Item 13 Any Other Business

KT informed the group the State of the Nation report by UKLTB has been published with useful information about LED replacements and energy savings.

DW reported that LoLEG chair and vice chair positions became vacant and will be filled by the incumbents. Westminster have produced a carbon calculator for their schedule of rates items to capture the total carbon impact from the manufacture, installation and operation. The Centre for London have been developing a pan London lighting strategy. The draft is causing some concern and its contents are under review.

SL reported HE will be updating their MCHW 1400 series documents, so they are looking for document reviewers for peer review. Reported issues with around 20% of luminaire powder coating failing on a large installation of a certain make on the network away from coastal environments.

PH reported that the BREXIT agreement had product Standards included. The LIA reports there are a lot of anomalies within the document that needs to be resolved. There are new energy labelling regulations to be launched in September, the document is currently out for consultation by Department for Business, Energy and Industrial Strategy (BEIS). All Party Parliamentary Group (APPG) for dark skies has issued a 10 point document for Government consideration. There is a mechanism for those home-working to claim £5/week relief against their costs.

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Item 15 Dates of Future Meetings

<p>ADEPT LG 10th June 2021 30th September 2021</p>	<p>UMSUG 17th March 2021 16th June 2021 22nd September 2021 15th December 2021</p>
<p>ADEPT Engineering Board 25th June 2021</p>	<p>UKLTB 8th April 2021</p>