

UK CONTROLLED ENVIRONMENT USERS' GROUP

MINUTES OF 2010 ANNUAL GENERAL MEETING

The Annual General Meeting of the Controlled Environment Users' Group was held on Monday 6th September 2010 at Bramber House, University of Sussex, Falmer.

The UK CEUG Chairman, L. Incoll, opened the meeting at 20.45 pm.

Present: C. Abbott, C. Armstrong, L. Benjamin, M. Chivers, D. Clark, L. Connole, A. Cookson, R. Darby, C. Denston, C. Fox, J. Franklin (Secretary), P. Gill (Treasurer), M. Gilroy, F. Gilzean, P. Glanfield, A. Griffin, L. Hansen, S. Harvey, S. Haupt, G. Holmes-Henderson, L. Incoll (Chair), E. Jansen, P. Langley, M. Lappage, K. Manger, N. Macrae, A. Morgan, R. Natt, A. Padfield, R. Parkinson, G. Pitkin, P. Reed, M. Richardson, S. Robertson, B. Robertson, J. Roy, K. Salvante, A. Sim, D. Skelton, M. Stenning, G. Taylor, C. Tilley, G. Waimann, O. Westengen.

Apologies: P. Downey, M. Fuller, G Holroyd, E Isger, I Pearman, L Penketh, R. Randall, K. Sawford.

1. **Minutes of the previous meeting at the Holiday Inn, South Luton, 15th September 2009.**

The minutes had been distributed to members before Christmas in the annual mailing and were available on the CEUG web site. The minutes were approved unanimously as a true record of the proceedings (proposed: G Holmes-Henderson; Syngenta; seconded: B Robertson, JIC).

2. **Matters Arising**

There were no matters arising on the minutes.

3. **Chairman's Report (L Incoll, University of Leeds)**

“Introduction

This year we have concentrated on the organisation of the next three annual meetings which include hosting an international conference in 2012. The educational objectives of the group have been met in several areas this year. We held a very successful scientific meeting on containment. Our on-line interactive discussion group has continued to host constructive discussions on controlled environment subjects.

At last year's AGM I said that the Executive Committee would appreciate your feedback on workshops. Are they worth it and if yes, what further workshop would you like? I got no response. Am I to conclude that your disinterest means that you don't want more workshops? I also asked for members to help us to publicise the group by taking the poster to scientific meetings and passing on membership leaflets to interested colleagues. Again no response. Does no one go to other scientific meetings?

The Group has survived for 44 years but I have never been more conscious of the fragility of its survival into the future in this post-election period of financial austerity. This is compounded by the foolish decision to put the futures of successful research institutes into the hands of universities, a proven recipe for disaster for the institutes. One consequence of the government's budgetary stringency is that three of our members from John Innes Centre have been compelled to cancel their attendance at this year's scientific meeting and one of them has been forced to resign from the Executive Committee which is a great disappointment to us knowing that the John Innes has been associated with this group since its foundation in 1965. It has had a distinguished history of hosting meetings over the life of the group, in 1978, 1985, 1992, and 2001. It is significant that the Group chose to hold the first ever International Conference on Controlled Environments "Controlled environments in the new millennium" at the John Innes Conference Centre in 2001 (organised by the experienced team of Mr Mike Crawley/ Mr Joe Aldous/ Mr Alan Nicholls/ Ms Victoria Gardiner).

Recent Meetings

1. Hertfordshire 2009 – South Luton and Harpenden "CEs for Containment"

The second day of the meeting, after the 2009 AGM, was very successful. Julian Franklin's large team conducted delegates over the impressive, well-run CE facilities at Rothamsted Research and the interesting manufacturers' trade exhibition. Those who stayed for the afternoon enjoyed a historical tour of Rothamsted Manor house and an intriguing visit to the 'Classical' 'Park Grass' experiment, first started in 1856 and still running with many of the same treatments having been applied for 154 years. The 'Classical' 'Broadbalk' experiment (established 1843) was not visited because the plots had all been harvested.

2. Sussex 2010 – "CEs for conservation: from genotype to ecosystem"

This meeting will be half way through when this report is presented at the AGM. At the time of writing, it is evident that the local organiser, Martyn Stenning of the University of Sussex has organised an excellent set of papers for the scientific meeting at Falmer including three overseas speakers, including one from as far away as British Columbia, and local organiser Keith Manger of Kew Gardens has arranged a comprehensive tour of the Millennium Seed Centre at Wakehurst Place and an interesting trade exhibition by 16 companies, which must be a record number for our 24-hour annual meeting. Our thanks go to Martyn and Keith.

Future Meetings

2011: Colin Abbott (University of York) and Richard Natt (FERA, Sand Hutton) have continued organising this annual meeting at York on the subject of "Greenhouse technology and practice". The afternoon scientific sessions will be at FERA (ex-CSL) at Sand Hutton and five speakers (including two from the Netherlands) have been identified and invited. The tour of facilities will be at the Department of Biology, University of York with the trade exhibition, and at Stockbridge Technology Centre, Cawood south of York.

2012: The organisation of the fourth international CE conference at Cambridge in September 2012 is moving slowly. The Group has decided that the venue should be

Downing College near the Plant Science Department and within walking distance of the Department's CE facilities and the Botanic Gardens and a booking has been made. Julian Franklin and Mick Fuller have prepared an itinerary and budget for a one-day post-conference tour which has been put to NCERA-101 and the ACEWG, both of which have subsequently asked for a two-day tour instead.

2013: We were set fair for a meeting at the John Innes Centre with organisation already well advanced because of the impressive kick start that Stephen Andrews and Barry Robertson had given to the organisation of this annual scientific meeting. Dates had been suggested, a theme identified, and subjects proposed for five speakers to be invited. Regrettably following 'managerial turmoil' at JIC, Norwich, this meeting may not go ahead and we may be looking for another venue and theme.

Communications

1. 'UK-CEUG' JISCmail List

There has been more activity in the last year with much the same number of informative messages from the Executive Committee (13) but with more messages from members (63) seeking help by asking questions and participating in the sometimes considerable discussion. Fourteen subjects were discussed ranging from 'Jet 5' to 'Steam/Electric Soil Steriliser'. In the following list, questions are indicated by '?':

1. ? Jet 5, Peracetic acid – Julian Franklin (1 + 4 messages)
2. ? Autolaves [sic] – Richard Natt (1 + 4 messages)
3. ? Barley cultivars – Tom Pitman (1 + 3 messages)
4. ? Barley cultivars – Tom Pitman (6 messages)
5. ? Growth Room Peter Gill(1 + 6 messages)
6. ? Russet Burbank potatoes. (1 + 3 messages)
7. ? Feedback on Scientific Topics for the 2012 Meeting in Cambridge, UK (1 + 2 messages)
8. ? UV light – Lance Penketh (1 + 1 messages)
9. ? Autoclaves – Rob Darby (1 + 2 messages)
10. ? Lucerne/Alfalfa plants – Julian Franklin (1 + 1 messages)
11. ? Steam/Electric Soil Sterilisers - Alistair Griffiths (2 + 5 messages)
12. ? Rice plants – Julian Franklin (1 message)
13. ? Potting compost – Richard Natt (1 + 7 messages)
14. ? Grow lights causing damage – Danny Skelton (1 + 5 messages)
15. Notice about Dann Adair's Practical Guide to Containment – Lynton Incoll (1 + 1 message)
16. Our 2001 Scientific Meeting – request for lecture topics – Lynton Incoll (1 + 1 message)
17. Tissue culture guidelines on-line – Lynton Incoll (1 message)
18. Notice about annual mailing – Lynton Incoll (1 message)
19. Announcement: ENVIRON 2010 Flyer - Michelle Bennett (1 message)
20. Report: Sulphur Plasma lighting – L. Incoll (1 + 3 messages)
21. News: Meeting announcement for September 2010 (1 message)
22. News: FW: New Regulations - The Control of Artificial Optical Radiation at Work Regulations 2010 (1 message)
23. News: Communication – Peter Gill (1 message)
24. Obituary: In remembrance of Brian Wilson - member (1 message)

25. Obituary: Mike Hibbert - sad news (1 + 1 message)
26. News: Reminder of last date for discounted booking for 2010 meeting – Martyn Stenning (1 + 1 message)
27. News: Reminder of closing date for 2010 meeting – Lynton Incoll (1 message)

2. Website

The following existing pages have been modified:

1. Item 19: Link was activated in November 2009 from our site to the NCERA-101 pages where the new down-loadable tissue culture guidelines and the downloadable minimum guidelines (modified to enable correct printing) are posted.
2. Item 8: 2009 AGM minutes added in December 2009 as <minutes09-acro.pdf>.
3. Item 9: 2009 Contents page for 2010 Proceedings and Full Proceedings were added in December 2009 as <contents-page-09.htm> and <proceedings-09-acro.pdf> respectively.
4. Item 2: 2010 Sussex meeting announcement was updated in March 2010 with details of the fifth speaker, Katrina Salvante, and in May 2010 with details of arrangements for booking for the meeting.
5. Item 2: 2011 York meeting announcement added in June 2010 <announc11-ceug.htm>.

The most important of these modifications is the first because it makes both sets of guidelines available to members in downloadable form. Instructions are given also to help members to print the leaflet on double-sided A4 or Letter sized paper and the poster on A3 or Ledger sized paper.

Comments on the web site – its items, its ease of use and suggestions for new pages are welcome.

Membership

Thankfully there has been a small net increase in membership which conceals a good number of new members offset by resignations, deletions, deaths and retirements. Sadly two members died during the year, Brain Wilson of Wye College who organised the meeting at Wye College in 2000 and Mike Hibbert, of Rotronic who had been elected a special member for his expertise on humidity. We have seven new overseas members, four from Ireland, two from the Netherlands and one from Canada.

Since September 2009:

Category	Number
New members	11
Members resigned or removed	7
Net change	+4
Current total	192
No E-mail contact – <uk-ceug> JISCMail group (no e-mail	5

address or unsubscribed)
 Attended the 2009 meeting (members only) 49

Overseas recruitment:

Australia - joined	
Belgium - joined	
Canada – joined	1
Germany – joined	
France – joined	
Ireland - joined	4
The Netherlands – joined	2
Spain – joined	
USA - joined	

Publications

1. CE Guidelines for tissue culture facilities

The last step in the process of the ICCEG publishing these guidelines was the mounting of the guidelines on the web site of NCERA-101 in the US making them freely available for reading or downloading and printing, and the establishment of a link from the UK CEUG's web site to NCERA-101's. I adapted the documents for printing on ISO paper sizes and American paper sizes and I developed instructions to facilitate the printing of the leaflets and posters onto standard and non-standard paper. Post-graduate students and managers of facilities will now be able to print out their own copies.

2. CE Guidelines for monitoring and reporting environmental parameters of experiments in greenhouses

I have to report that progress has been slow since the last AGM in preparing these guidelines which have a target for publication of the next international CE conference at Cambridge in 2012. In April this year, the chairman of the ICCEEG, A.J. Both of Rutgers University, New Jersey, tried to kick start the exercise by writing to the ICCEG's sub-committee on 'Greenhouse Guidelines' but got no response from its 22 volunteers (nine of our members had volunteered to participate in the preparation of the guidelines). In mid-June I subscribed 20 people (two UK CEUG members having since resigned) to the 'CE-Guidelines' discussion list and the chairman started the on-line discussion – again no-one replied, so I wrote in mid-August in an attempt to stimulate discussion, there were replies but again not one from UK CEUG volunteers. This looks bad. I personally wonder whether the guidelines will ever be completed.

To conclude

Finally I thank the Executive Committee members for their continuing support of me and the UK CEUG and in particular the individuals whose names I have mentioned above and whose involvement in Group affairs will be apparent in the proceedings of the annual general meeting. In particular I value greatly the support of our secretary, J. Franklin, of our treasurer, P. Gill, and also of the Financial Sub-committee of Alan Morgan, Garry Taylor and Graham Pitkin whose recruitment of sponsors and trade exhibitors enables us to finance many of the activities that I have mentioned above.

Thanks are due to Garry and his Weiss Gallenkamp colleagues who are responsible for the actual putting together of the sponsored mailing and its despatch to members. We are grateful to our eight commercial sponsors, and to trade exhibitors for their support – it shows in the activities that we are thereby able to organise. “

The report was approved unanimously (proposer: A. Morgan, University of Warwick; seconder: G Taylor, Weiss Gallenkamp)

4. Secretary’s Report (J Franklin, Rothamsted Research)

“As in previous years, the executive committee met twice during the year at Rothamsted. Much of the business of the committee is conducted via email messages, however the Executive Committee aims to meet at least once a year to resolve the details of the annual meeting as well as to progress the business of the group. The group is grateful to Rothamsted Research for provision of its facilities for meetings.

During the year the secretary completed the annual return to the Charities commission. This is an annual return, completed on-line soon after the annual general meeting and is available at: <http://tinyurl.com/32vecmq>.

This year we have provided a Trustees report again although the Charities Commission have amended the requirements to provide such information to those charities with an income exceeding £25,000 per year.

Much of the business of the executive group is focussed on the annual meeting and the planning of future meetings. At our last meeting in June apart from finalising details for this meeting we were planning the 2011 meeting in York and the 2012 International meeting in Cambridge. The committee is looking into whether it is appropriate to have ‘corporate membership’

As Secretary I would again like thank Lynton for all the work he does as chairman of the group. This includes most of the ‘secretarial’ work for which I am grateful.”

The report was approved unanimously (proposed: G Waimann, Rothamsted Research; seconded: C Abbott, University of York)

5. Treasurer’s Report for financial year 2009/2010 (P Gill, SCRI)

Account for Financial Year 2009-2010 (see Appendix A)

The Light Sensor Calibration Package was used on two occasions during the year (Rothamsted Research & NPower), bringing in an income of £160.00.

The Financial Sub-committee has had difficulty this year in acquiring mailing sponsorship (down from 10 to 8 sponsors). The total of £2,200 (less £14 bank charges) financed the distribution of manufacturers’ literature (£266.08) and Executive Committee meetings (£1,129.34).

Bank interest on a balance that never fell below £7.6k over the year was £3.46! This was dwarfed by the £21 charged for three bank transfers into our account from mainland-Europe.

The final balance for the year was £10,865.41 after allowing for the liability of an unpaid cheque (£266.08).

Final financial statement: 2009 Rothamsted Conference (see Appendix B)

The conference was held jointly at the Holiday Inn, South Luton and Rothamsted Research on 15th-16th September 2009. This final statement was not available until after the main accounts closed on 31st July 2010, however, it shows a healthy surplus (£2,078.18) on the operation of the meeting. The nine trade stands brought in an income of £3,375.00 (less £7.00 RBS bank charge) which will be paid into the central account to cover speaker/chairman travel and subsistence (£672.14) and AGM (£93.28) costs.

Accounts for Executive Committee and Annual General meetings (see Appendix C)

The costs of operating the two Executive meetings fell this year (down from £1,382.71 to £1,174.51) in part due to earlier planning of the June meeting, but mainly due to smaller numbers attending and changing membership. The cost of travel continues to increase above inflation.

The cost of the 2009 AGM (£93.28) was much lower than the previous year (£209.85) as the Holiday Inn invoice was inclusive of the room hire.

Questions on Treasurer's Report: L Hansen asked "why are the some of the costs listed so low e.g. audit costs (£9.98), coach and driver (£8.64)"? P Gill (Treasurer) reported that the books were inspected not audited. J Frankin (Secretary) reported that the low transport costs were based on an internal mileage rate.

M Stenning pointed out that "the current conference had 13 trade stands not 6 as in the printed accounts". P Gill said "the extra trade stands would show on the accounts next year and the number was correct at the time of printing."

L Incoll pointed out that "the £2,078.18 excess from the 2009 conference was due to a good deal from the Holiday Inn. The budget was based on 35 attending and 50 people attended. He explained that you can't budget for 50 people as the deficit would be too big to deal with".

The report was approved unanimously (proposed: G Taylor, Weiss Gallenkamp; seconded: M Stenning, University of Sussex.)

6. Election of the executive committee

Two trustees (L Incoll & J Franklin), whose terms were completed, sought re-election. With one vacant position this gave a total of three vacancies. There were three nominees for these vacancies and they were duly elected to the committee.

Position	Person	Proposed	Seconded
Trustee	L. Incoll (University of Leeds)	M. Lappage	L. Penketh
Trustee	J. Franklin (Rothamsted Research)	I. Pearman	F. Gilzean
Trustee	A. Morgan (Warwick HRI)	S. Robertson	J. Franklin

7. Future Meetings

See table below for scheduled meetings to 2012 and provisional plans after 2012.

Schedule of future meetings - scheduled and provisional

Date	Venue	Comments
2011	York University / FERN, Sand Hutton	Theme: "Greenhouse Technology and Practice". Organisers: Colin Abbott and Richard Natt (will be 12 years since last visit)
2012	September (second week), University of Cambridge	International Controlled Environment Conference. Theme: "Controlled Environments: Technology and Practice". Organiser: Colin Denston
2013	John Innes Centre, Norwich	Theme: "Increased Growth & Reduced Carbon Footprint". Organisers: Stephen Andrews and Barry Robertson (will be 12 years since last visit)
2014	Syngenta, Jealott's Hill	(will be 12 years since last visit)
2015	University of Lancaster	(will be 12 years since last visit)
2016	Fiftieth Anniversary Meeting University of Plymouth	(will be 11 years since last visit)
2017	Edinburgh	New site

Note: Apart from the 2016 meeting, venues after 2013 are proposals not commitments.

- a) *Annual Meeting on "Greenhouse Technology and Practice", University of York, FERA and Stockbridge Technology Centre, 2011 (C. Abbott)*

C Abbott reported: That the basic structure was in place; the venue has been decided upon and the facility visit has been confirmed to be to Stockbridge Technology Centre at Cawood, where experimental work in greenhouses will be on show. Letters of invitation have been sent to speakers. C Abbott reported that he has had difficulty contacting trade exhibitors, such as FEC and Unigro. M Stenning suggested contacting local suppliers too. If you do have any suggestions for trade exhibitors please contact C Abbott.

- b) *International Conference on CEs, University of Cambridge 2012 (J. Franklin and combined CEUG/NCERA-101 organising committee)*

L Incoll reported: That there had not been intense activity, but the itinerary and budget for the one day post-conference tour had been prepared, but the Australasian and North American group reported back that they want a more extensive (two day)

tour so J Franklin is preparing alternative proposals. The programme sub-committee will be meeting in the autumn in Edinburgh to discuss the programme and updates.

c) Annual meeting on “Increased Growth & Reduced Carbon Footprint” at the John Innes Centre, Norwich 2013

L Incoll reported: Planning got off to an impressive start with the theme identified ‘Increased growth and reduced carbon footprint’ and five speakers suggested. But as stated in the chairman’s report due to ‘managerial turmoil’ the meeting might not go ahead.

B Robertson reported: That he had explained to the management at the John Innes Centre the importance of the CEUG group and its annual conference and reported that they accepted this and agreed the conference would go ahead. He foresees no problem with the conference going ahead in 2013 and apologised for any inconvenience the slight disruption has caused.

8. Light Sensor Calibration Package (J Franklin)

J Franklin reported that there have been two hires of the package in the last year, which means only a total of nine since the package was purchased. There is an outstanding hire with Plymouth University.

There has been a slight hiatus with the package, concerning a discrepancy between calibrated sensors and new sensors. The package was sent back to Skye Instruments and the problem was identified. The problem was due to the fact that they calibrated sensors on a batch basis. Sensors have now been individually recalibrated.

Erik Jansen asked will it work with LEDs? J. Franklin replied possibly, but LEDs are sensitive and ‘peaky’ and bias the sensor. It will depend on how you match the light sensor up. Only other suggestion is to use a spectroradiometer. [Note added after the meeting by I. Pearman (Rothamsted Research): It should be fine to use the calibration package with LED light sources. Any problems will be the same as for any other ‘peaky’ light source. That is not all photons near 400 or 700 nm may be recorded accurately due to the slope of the sensor's response at the ends of the range and the same applies if a source’s peak output coincides with a dip in the sensor's response (and to a lesser extent variations in the filter material). He could see this causing a problem if the user was trying to measure an LED with a bell-shaped photon response curve centred on 680nm where the response of the sensor is less than a perfect quantum response.]

9. Open discussion on the following CE topics

Control systems

L Benjamin (Rothamsted Research) talked about the setting up of the shared centre for purchasing and procurement, he reported there had been a shared service centre set up for all research councils (NERC, EPSRC Medical Research Council etc.) for all purchasing and procurement and wanted to know how that is effecting controlled environments?

G Waimann (Rothamsted Research) reported that he has exchanged emails with the shared service centre and that he has been assured that any company he is currently dealing with will go onto the system. He pointed out the only potential worry is if someone in the shared service identifies a cheaper, but inferior product to buy. He thinks controlled environments is too specialised for this system, L Hansen (University of Reading) agreed with this.

J. Franklin (Rothamsted Research) added that one of the concerns is how health & safety and maintenance issues are addressed within this system.

L Incoll (University of Leeds) asked O Westengen (Norway): What sort of auxiliary plant do you have associated with your installation that would require that it never failed and how do you get on in your remote situation? O Westengen responded: We opened in February 2008 and to cool down the mountain after they had chiselled out all of the rock we required more power than permanent generator (10 kilowatts). We are currently running on 30 kilowatts. The temperature is maintained at -18°C and everything is powered by coal.

M. Stenning (University of Sussex) asked: If you have got a frequent temperature on the outside of -25°C why don't you use a system for pumping cold air into the underground system as opposed to a refrigeration system. O Westengen said that they do have a system of pumping cold air in, but it doesn't quite work and the engineers are trying to find out what's wrong with it, so for now they are relying on generators.

Lighting

J Franklin (Rothamsted Research) wanted to know if anyone has done a risk assessment for glasshouse or CE lighting under the control of 'artificial optical radiation at work' regulations, as there are no examples of these in the guidelines. B. Robertson JIC, Norwich) reported that he had had his lights risk assessed and said an easy way round the regulations was to wear safety spectacles. E Jansen (Philips Lighting, Eindhoven) reported that Philips have been working to produce a balance of different LEDs which optimise growth of different crops. Philips are developing different products such as a research module available in far red, deep red and blue which can also be dimmed and used as a replacement for incandescent lamps. He said that they will last for 8-10 years instead of one year.

L Incoll (University of Leeds) asked K Salvante (Simon Fraser University, Burnaby): Has work been done on the effect of spectral distributions of light on birds living in controlled environments? She responded that her work was done with fluorescent, full spectrum light in chambers. Work has been done on looking at feathers with special lighting conditions because birds can see UV wavelengths; this has been looked at in breeding studies.

D Clarke (Macaulay Institute) talked about his purchase of the sulphur plasma lamps, ordered from Gavitas, but not received yet. He spoke about the benefits of the lamps saying:

"They're supposed to have half the running cost of equivalent high pressure sodium lamps, plus they have a continuous distribution across the visible spectrum. The lamp is 270 W, which is much more versatile than 1000 W sulphur plasma lamps because, including the luminaire, they are roughly the equivalent in size to a conventional"

horticultural sodium lamp luminaire. There are no moving parts to be seen, the module which contains the light source is roughly 75-100 mm in diameter and 75-100 mm deep, the RF module is set off to the side feeding into it. You can only see the light module on the unit, to the side of it is a heavily thinned unit which contains power supply, which is 28 volts at 10 amps which feeds into the RF unit and then into light module. The manufacturer says you don't need additional tungsten lamps to supplement the red end of the spectrum. The lifespan of the lamp is 30,000 hours for horticultural use. Its usability, reliability and longevity are appealing. The price is 850 € "off the shelf".

L Incoll (University of Leeds) commented on the pay-off of the lamp which would be from its life and spectral distribution. He also reported that the Korean manufacturer LG Electronics have them in their catalogue. Their catalogue says they can supply to large order numbers (15,000 +) which suggests that the technology is sound. J Franklin (Rothamsted Research) commented that the attraction of sulphur plasma lamps is that their spectral distribution is a good approximation to sunlight.

Refrigeration

G Waimann (Rothamsted Research) said that virgin R22 has not been available since the beginning of this year and that R22 can only be recycled and reclaimed up until 2015 (end of 2014). The rules surrounding its use will be similar to CFC's rules; as long as it is in the system and contained, you can continue to use the system but **from** the 1st January 2015, if the system is serviced, you won't be able to put the R22 back in. He added that HCFCs have now also come under F GAS (HFCs) regulations and you now have to keep records of all HCFCs in use as you do HFCs. He added that anyone working on refrigeration systems needs a City and Guilds 2079 or equivalent CITB (Construction Industry Training Board) qualification (including HCFCs and F GAS.) All people working on refrigeration systems should also be registered with Refcom (<http://www.refcom.org.uk>) or a similar body. If you require any further information please contact him.

Instrumentation, sensors, monitoring

P Gill (SCRI) asked: As the quality assurance of sensors has come into controlled environments, does quality assurance affect you at the sharp end? L Hansen (University of Reading) commented that financial ability restricts having instruments calibrated. L Benjamin (Rothamsted Research) talked about the differences between institutes and universities, how institutes are told to abide by the regulations and universities are told it is good practice to follow them. He commented on how generally you do what you are told to do, but it does depend on whether you can afford to do it. He said that the lab and the controlled environment should operate in the same way in regard to implementing regulations.

A Padfield (Unigro) added that all scientists should be concerned with the calibration of the instruments. J Franklin (Rothamsted Research) responded by saying in his experience less than 10% of users ask for sensor records, despite knowing this data exists. G Waimann (Rothamsted Research) commented how in his experience scientists readily believe what the instrument tells them. R Natt (FERA) commented that some scientists do ask for calibration others do not.

K Salvante (Simon Fraser University) spoke about her research set-up with birds and explained how the chamber held 6 cages, there were 3 data loggers which all came out

at the same temperature, and she commented that she didn't calibrate the instruments, but did independently test the temperature with boiling water. L Incoll (University of Leeds) commented that it is important to have the instruments calibrated so that experiments can be repeated, so that the conditions remain the same. He also commented how plants and animals react differently to spectral distribution, so calibration is important here.

A Padfield (Unigro) cited a case at the moment with his company where people on peer review have been rejected on the basis that they can't substantiate that the work they were doing was conducted in the conditions they cited. L Benjamin (Rothamsted Research) responded by saying that peer review rarely gets into that level of detail and generally looks at the design of experiment. L Incoll (University of Leeds) commented that a lot of peer reviewers nowadays don't have any physical sciences background and that quality assurance is often reflective of the scientific culture at the time.

Heating, reclamation and energy management

A Padfield (Unigro) spoke about looking at heat recovery and CHP or any others ways of utilising reclamation as a sustainable source and deriving any cooling from it. He commented about the potential for self-funding systems available from different energy suppliers which the group could benefit from. He added that the logical way of driving down costs is to take one and match the demand for other he added that this would be both cost saving and efficient. He continue to explain that there is enough heat in CE walk-in chambers to heat greenhouses for free and that there are ways of funding this through the supply of equipment which could be cost-neutral. He thought it would be useful to get a consultant in to talk about this. G Waimann (Rothamsted Research) commented on how it would be a major investment. J Franklin (Rothamsted Research) commented that you have got to have somewhere relatively close by where you are going to use the heat. The biggest cooling requirement is in the summer, which is not necessarily when you are going to be able to use the heat. Additionally getting initial capital costs and fitting the system is costly.

The meeting closed at 23:25 h.

F Hurd, Minutes Secretary
8th October 2010

Postscript: The meeting finished abruptly as we faced eviction from the building. There was no time to move a vote of thanks to the organizers. I therefore record here the appreciation of the group for the work of Martyn Stenning and Peter Reed (and, in anticipation of the next day's visit, Keith Manger and his Millennium Seed Centre team), for making the 2010 meeting so successful and enjoyable.

Annexe A

UK Controlled Environment Users' Group
Accounts for the financial year 1st August 2009 to 31st July 2010

Royal Bank of Scotland account, Dundee (10081698)

Balance b/f at 1st August 2009		£8,145.95
INCOME		
2009 Rothamsted Conference (4 trade stands)	£1,500.00	
2010 Sussex Conference (6 trade stands)	£2,250.00	
2008/09 Mailing sponsorship (1)	£250.00	
2009/10 Mailing sponsorship (8)	£2,200.00	
Light Sensor Calibration Package	£160.00	
Bank interest	£3.46	
		£6,363.46
EXPENDITURE		
2009 Rothamsted Conference	£63.10	
2010 Sussex Conference (deposit)	£687.40	
2011 York Conference (Chairman's visits)	£27.04	
2012 Cambridge International Conference (deposit)	£1,000.00	
Executive Committee meeting (T&S)	£1,174.51	
Leeds University office services (printing, postage, etc.)	£381.83	
Treasurer's office expenses (postage & printer cartridge)	£13.06	
RBS Bank charges on foreign income (3)	£21.00	
Audit of 2008/09 accounts (honorarium)	£9.98	
		£3,377.92
Held in account at 31 st July 2010		£11,131.49
Liabilities (Taylor: mailshot postage)		£266.08
Final balance on account		£10,865.41

Peter Gill & Graham Pitkin,
18th August 2010.

File: AGM Accounts-2009-2010-01.doc

Annexe B

UK Controlled Environment Users' Group
Financial statement for the
Conference held at the Holiday Inn, South Luton & Rothamsted Research
15th to 16th September 2009

1 CONFERENCE ACCOUNT	
INCOME	
Registration	£1,280.00
Accommodation & subsistence	£10,046.70
	£11,326.70
 EXPENDITURE	
First mailing	£74.73
Second mailing	£111.75
Document wallets & badges	£66.51
Printing handouts	£83.00
Coach & driver	£8.64
Audio visual hire	£49.00
Conference dinner	£2,014.65
Lunch, tea & coffee (Holiday Inn)	£1,288.80
Ensuite B&B (Holiday Inn)	£5,015.00
Lunch, tea & coffee (Holiday Inn)	£431.25
Donation to Rothamsted Manor guide	£100.00
Credit card charges	£5.19
	£9,248.52
 BALANCE	 £2,078.18

2 CENTRAL ACCOUNT	
INCOME	
9 trade stands at £375 each (less RBS bank charges)	£3,368.00
	£3,368.00
EXPENDITURE	
Travel expenses (CEUG chairman)	£63.00
Holiday Inn accommodation & subsistence (speakers & chairman)	£609.14
Minute Secretary	£83.30
Auditing of accounts	£9.98
	£765.42
BALANCE	£2,602.58

Peter Gill, Julian Franklin & Graham Pitkin,
18th August 2010

File: Final financial statement-2009-05.doc

Annexe C

UK Controlled Environment Users' Group
Accounts for the financial year 1st August 2009 to 31st July 2010

Cost of AGM & Executive Committee meetings

AGM held at the Holiday Inn, South Luton on 15th September 2009		
Minute Secretary	£83.30	
Auditing of accounts	£9.98	
		£93.28
Executive meeting held at Rothamsted Research on 12th January 2010		
Travel	£387.18	
Accommodation	£209.95	
		£597.13
Executive meeting held at Rothamsted Research on 11th June 2010		
Travel	£401.10	
Accommodation	£176.28	
		£577.38
Total		£1,129.34
<i>(2008/09)</i>		<i>(£1,592.56)</i>

Peter Gill & Graham Pitkin
18th August 2010

File: Exec meeting costs-2009-2010-01.doc