

UNIVERSITY OF EDINBURGH

MINUTE OF A MEETING of the Sustainable Laboratories Steering Group held in Room 1.09, Main Library, George Square on Tuesday 2 June 2015.

1 Welcome and Introductions

The Convener welcomed attendees to the second meeting of the Group, including new member Graham Thomas, Director of Central Bio-Research Services (CBS). The meeting would focus on the draft Sustainable Laboratories Implementation Plan 2015; identifying where support was required, building an evidence base and business case.

2 Minute

The minute of the meeting held on 27 January 2015 was approved as a correct record.

A

3 Matters Arising

Action – All to email the Secretary with any suggestions for a research student to join the core group.

SUBSTANTIVE ITEMS**4 Utilities Efficiencies & Role of Lab Managers/Heads of School**

This presentation was carried forward to November's meeting.

Action – GT to update the Group in November.

SLSG noted ongoing review of the University Climate Strategy. Despite the efforts of a wide range of staff, UoE was not on track to meet its climate emissions targets, due to growth and intensification of activities. Estates and SRS were aiming for a 10% energy saving across the University from business as usual and labs had a significant role to play. Metering, though costly to install, could provide the data required to identify opportunities to make spend-to-save investments. SLSG recognised that targeting metering was a key tool in developing a business case, and not an end in itself.

There is an aspiration for a larger central fund which would operate with clearly defined parameters, would incentivise energy saving investment in labs and could roll out improvements across the board. Subsequent discrete projects could be funded from savings within these processes. SLSG acknowledged that universities by their nature were well placed to afford to invest for the long term.

5 SLSG Implementation Work Plan 2015

B

The Programmes Facilitator – Laboratories introduced the Implementation Plan, updated to include comments received at the previous meeting and subsequent input from Estates. Like the Group, the Plan was designed to steer action towards embedding sustainability within laboratories at UoE. The bulk of these actions would fall to the Programmes Facilitator – Laboratories role, though support needs from some areas had been identified as key to moving the Plan forward.

Activities had been grouped into areas identified at the first meeting:

'A. Evidence Building'

Evidence building was ongoing (detailed in Paper D), with an initial focus on energy as having the greatest cost and environmental impact. Work would be also done around water, waste and chemical substitutions to reduce hazardous waste arisings.

'B. Training and Engagement'

Connections had been made through Val Gordon to the [HEaTED](#) network in order to better understand the needs of technical staff.

'C. Utilities and Waste Efficiencies'

This section comprised the bulk of efficiency implementation plans, requiring a business case to make financial savings quantifiable.

'D. Outreach and Securing Funding'

The Labs Facilitator role was funded for 12 months. If the Group agreed that this sustainable laboratories work was valuable, it could look to various funding opportunities such as the Scottish Funding Council and the Universities Scotland Efficiencies Taskforce to extend that. Zero Waste Scotland was also identified as a potential funding source.

'E. Estates Design and Construction' (in collaboration with Estates Development)

Since the document was produced the Labs Facilitator had been invited to have input into the Darwin refurbishment. It was hoped that consultation at this key stage would continue in future projects.

SLSG approved the contents of the Implementation Work Plan.

a) Update on progress against the Plan

SLSG discussed the progress analysis report on the Plan so far (Paper C), which used a traffic-light system (RAG) to indicate progress against objectives. The report would be updated and shared with the Group on a quarterly basis.

C

Objective: Evidence Building

Development of an evidence base was on track, with particular progress being made on fume cupboards. Conversion to VAV at Joseph Black could yield substantial savings – further quotes were awaited. The Roslin freezer study continued to make progress. This 5 year project was an excellent asset for the University to demonstrate energy savings and identify which samples could run at higher temperatures. Depending on risk appetite, it would soon be possible to act on these findings. Different timescales were relevant to different labs and lab users, some requiring long-term stability, some not keeping samples beyond 6 months. The energy savings were already clear, tests for degradation were repeated every 6 months and the evidence would grow stronger as the project progressed. The main issue would be culture change for labs users, who may have been storing samples at -80 for their whole careers. Further thought would be given to the roll out and messaging to ensure it came from a trusted source. All UoE freezers had variable capacity so no additional expenditure on infrastructure would be required.

Objective: Training & Awareness

The Labs Facilitator was working on a guidance document on exit procedures, including ensuring that samples were not left in storage unnecessarily and that poorly labelled chemicals were not left to be disposed of as hazardous waste. Most labs represented at SLSG did have robust procedures in place. This document, which would be available on the SRS website, was designed for those labs the Group did not have regular contact with.

Action – AA to check that the guidance document on exit procedures emphasised that a recycling strategy should be put in place to deal with old equipment.

Members recognised an issue with staff not feeling empowered to get rid of old equipment, however redundant, particularly if it had been expensive. There was a danger of WARPit accumulating out of date equipment. If the science had moved on, no one else in the University would want these items. There were opportunities in this area for UoE, or a social enterprise, to look at shipping equipment overseas. Equipment that was extremely energy inefficient would not be cascaded. It was proposed that space be set aside for a central dead store, organised through WARPit, to hold old equipment so that it could be properly maintained and covered by a single insurance policy. Procurement were working on a centralised asset register, though this had not yet been fully rolled out as an operational tool.

Discussions were ongoing on induction processes and alignment with other SRS activities. A lot of labs represented at the Group did include SRS elements in inductions, but this was piecemeal and varied according to the lab management. It was important to get a clear and consistent message across to technical staff at the start of their careers. Engagement with the HEaTED network was ongoing and HEaTED would be included in the Labs Workshop on training and development planned for 10 November 2015.

The Labs Facilitator was engaging with staff in GeoSciences to identify improvement opportunities and encourage the school to take part in the Lab Awards which were a useful tool in prompting action. Having conducted a walkaround, the Facilitator confirmed that a lot of the same messages applied to GeoSciences' lab space as would apply to a lab in Biology or Chemistry. The Group discussed what constituted a lab and how definition affected the areas to target. The Facilitator would investigate further and pursue widening engagement as far as practical, initially aiming to make connections with the School of Engineering.

Action – AA Draft document to be circulated.

Action – All to email the Secretary with any obvious gaps or areas where cover was light, as well as any suggestions for a representative from KB campus.

Objective: Utilities Efficiency

Once comments on the evidence had been received, decisions would be made regarding which case studies to publish on the web. Best practice for air handling systems identified during the Lab Awards was being drafted. Proposed events, case studies, induction and guidance documents would be circulated to the Group for views before being published.

Action – JR to circulate documents for comment including proposed workshop topics.

The opportunity to make an improvement by diverting non-hazardous consumables from landfill had been discussed at the labs workshop. SLSG noted the rising preference for disposable single use items. Items that were washed and autoclaved could be more damaging to take on board (generating Scope 1 or 2 emissions) than waste (Scope 3).

Action – AA to investigate and report back on the relative figures.

A similar move towards disposables had been noted in Accommodation Services, following life cycle analysis and factoring in the cost of staff time. The key was to recognise areas where the culture had moved on or benefit was marginal and focus on making intelligent evidence-based interventions where it mattered.

Objective: Securing Funding

SLSG noted potential funding opportunities through Zero Waste Scotland and initial scoping work was underway. Over the last three months a small scale research project funded by ZWS had been carried out with GeoSciences, the Business School and the School of Chemistry on zero waste business opportunities and there may be scope for further projects. Concerns were raised regarding materiality issues around energy and utilities savings versus potential proposals to ZWS which would focus more on circularity in procurement and waste and resource efficiency. It was not anticipated that the Scottish Funding Council would be in a position to offer funds in the near future. Martin Kirkwood, SFC Deputy Director, had been approached with a pitch to replicate S-Labs in Scotland. While broad agreement had been secured, SFC had no funds available to support this in the short term. A scoping proposal would go back to ZWS – the Energy Manager, Estate Development Project Manager and Roslin Campus Facilities & Services Manager agreed to act as a sounding board in advance of the submission. Any leads from members on potential funding sources or avenues to make a business case were badly needed at this early stage. When work was more established it should be self-sustaining.

Action – All members to contact the Secretary with suggestions for alternative sources of funding.

Objective: Sustainable Design

Improvements at the design stage were recognised as more effective than retrofitting. The S-Labs project was developing design guidelines. Currently at draft stage, these were expected to be in publishable format by September for the Annual Conference. Guidance would take the form of a checklist of lab-specific design questions, and, reviewed with Estate Development and academic staff for a UoE-specific context, would provide valuable continuity across the estate. Guidelines would allow bespoke elements as long as a need could be demonstrated.

Action – AA to circulate guidelines to the Group once available.

6 Findings From Building a Body of Evidence and Case Studies

D

SLSG noted the evidence base summary so far, which focused on energy opportunities, intended as the starting point for an investment business case to the University.

Cold Storage

Members noted potential savings on freezer plug loads and air conditioning energy consumption. At Roslin a lot of natural air ventilation ensured combined energy usage was lower, compared to research laboratories in the basement of the Chancellor's Building. This was another vital issue to address at the design stage. Overall sample management was good, with a number of areas looking at reducing stock and throwing out samples that were not needed. The focus should be on the expanding fleet of freezers (each of which could cost £1K p.a.). There was a difference of around £400 in the operating costs of an old versus a new freezer unit.

Ventilation

Replacing constant volume with variable volume fume cupboards would save on energy costs and afford quick payback. By dropping the flow rate by 40%, the University of Nottingham saw a 40% reduction in energy costs. Old electric humidifiers in animal labs could be replaced with modern gas equivalents with much lower running costs. Where facilities were using the CHP the normal cost difference did not apply and it was sometimes better to run on electricity rather than gas. Through the Estates

review process facilities had been identified where the plant was at a point of needing to be replaced or refurbished. Demand based ventilation would be especially useful in areas with 24 hour or varied access, though capital and maintenance costs would need to be offset. It was unclear who had the authority to make a change in rates, there was a variety of conflicting legislation from different bodies, and a tendency in these cases to default to the higher standard. Further discussion and investigation was needed to unpack the issue.

Cold storage and ventilation offered major savings but also required significant investment. Estimated payback periods had been included in the table in Annex 1. For projects with short payback periods and modest costs there was no reason not to go ahead unless it impacted on the science. The main focus would be on major projects (fume cupboards, freezers, drying ovens). For some of these improvements there would also be benefits in terms of staff comfort. It was important to take a long term view and not commit to small projects that would later be made irrelevant by larger initiatives (e.g. fitting timers to drying ovens and later deciding to remove the old ovens). Controls should be put in place to ensure projects delivered on their payback. A case could be made at Investment Committee, which was putting increasing amounts into the endowment for limited return.

Members recognised the value of the evidence base in changing behaviours, and felt that all the improvement schemes outlined were achievable and on the right lines. Over the next few months it would be evolved into a plan that, after a couple of iterations, members could sign up to, and that could be used as a basis for discussions on investment, and for potential roll out in the Schools.

ROUTINE ITEMS

7 Thematic Workshops

E

SLSG noted the minute of the first Labs Workshop focused on procurement and waste. The Purchasing Manager, Roslin Institute had presented an update on progress with the labs consumables contract in relation to waste minimisation. The Waste and Environment Manager had presented on the challenges, successes and future strategy for lab waste minimisation and the SRS Projects Co-ordinator had presented on the WARPit reuse portal, which had consolidated pre-existing pockets of reuse into a more visible, measureable system. Strategic approaches and practical actions proposed included: negotiating with suppliers to reduce packaging; providing additional training and guidance for lab users; continuing to expanding WARPit; promoting eStores to consolidate purchasing and deliveries; carrying out audits to identify and expand the most progressive recycling and reuse contracts across the estate; negotiating on packaging as a sector through EAUC and S-Lab; looking to internal academic expertise for alternatives to polystyrene for temperature controlled transport; taking a strategic approach to leasing versus purchasing; and repairing items, including HEaTED workshops and CPD for technical staff.

The next Labs Workshop on 16 June would focus on design guidelines.

8 Any Other Business

SLSG agreed to an additional meeting in late September, after the S-Lab Conference.

Action – JR to find a suitable date.

Post-meeting note: SLSG would meet on 29 September from 9am in Room 1.07 at the Main Library.