EAUC – Energy & Water COP – Carbon Management Planning

18 February 2016 at University of Reading, Whiteknights Campus

Pro VC intro

- PVC – carbon and sustainability champion
- PVC – background and interest in climate change
- NUS Blackout event
- 3rd in Brite Green League table
- 45% carbon emission's reduction since 2005 (source: Brite Green League)
- Absolute carbon emissions reduction; achieved -30% to date (target 35%) including reducing campus size – against 2008/09 baseline
- Economy of scale – replace all fume cabinet [ventilation] across campus
- District heating expansion – major further opportunity
- Estates strategy = include energy efficiency

Successes (whole group)

- Politics/external leadership
- Accuracy of data inc baseline
- Embedding CO_2 thinking at a senior level
- Great range of projects
- Energy management systems

Challenges (whole group)

- People resources (different to financial resources)
- Growth in sector – students and m^2
- Delivering absolute CO_2 reductions (compared to relative reductions)
- Contractors/projects tend to 'value engineer' out energy saving initiatives
- Student/staff engagement – continual challenge *(high turnover)*

Table discussions

Group 2

- o KINGS
  - (+) Risk committee for TEC energy procurement give a strong opportunity for Kings CFO to endorse project
  - (-) Issue is resources availability to deliver project + data granularity availability
- o CITY University
  - (+) 33% absolute carbon reduction since 2005 (partly through estates consolidation + CHP regeneration)
  - (-) How to continue making savings with a growing campus
- o WARWICK
  - (+) Mind-set
  - (-) Growing campus and struggle with absolute carbon emissions reduction
- o BATH
  - (+) Data availability (1,700); funding available but lack of resources; 35% relative reduction in energy consumption - work better with academics to drive change
  - (-) Huge capital plan / VC does not like CHP. Sustainability is not a student's priority
- o READING
  - (+) Good support from PVC
  - (-) Overcome barriers to progress (waste and ISO14001 and ISO5001 - 1 team with 2 line management)
- o ASTON
  - (+) Push for devolved energy budget
  - (-) Difficulty of students engagement; influencing capital projects

Group 3

(+) Reading – getting AMR to create an accurate baseline

(-) Reading – Poor student input to events and awareness raising etc

(+) Oxford University – handover for snags on new build is very good, last two buildings estates had a week in an unopened building to go through handover

(-) Oxford – architects not sticking to electrical + mechanical spec, on some occasions benefactors want a building to have certain features that aren't in the spec; changes are made later on without Estates knowing e.g. lighting types

(-) York – similar to Oxford + not having a detailed spec

(-) Bath – Research led so lab areas are difficult to get to save energy

(+) Aston – devolved energy budgets going through with annual targets – hopefully will show reductions

(-) Aston – BREEAM in construction was removed out of spec by senior staff for cost savings, and only energy rating added in, so designing a sustainable construction policy but will people use it

(+) Bedfordshire – Capital cost, when they started they had lots of capital cost to throw at projects

(-) Bedfordshire – Capital Cost – now they don't have much capital cost so have to go out and get as many loans as possible.

(-) Southampton Solent – maintenance want to stick AMR onto BMS; don't believe AMR would be useful on a large scale.

Challenges/successes

Group 1
- New builds - challenges
  - Often more CO_2 intensive
  - Tend to be better heated, rather than necessarily using less energy
  - More *mechanical* control not necessarily delivering CO_2 savings
- New builds - successes
  - Some institutions involved in design discussions from early stage – have a voice in design decisions (though not necessarily always listened to)
  - Some plan for likely CO_2 impact of future estate developments

Group 2
- (-) Access to resources to deliver viable projects
- (+) Define interim targets as a way to maintain / handle the challenge (short terms interim + long term aspirational longer term targets)
- (-) Commissioning & handover and maintenance of savings
- (-) Academic & Research to not care about carbon targets
- (+) Hierarchical of teams to maintenance / assets team is positive to facilitate projects (carbon projects save money and maintenance)
- (+ Bath) independent commissioning engineer appointed in capital projects and retained for 2-3 years

Group 3
☺ Several universities have recently pushed things through after several years of trying. Examples include:
- BSRIA Soft landings
- BREEAM Excellent specified for all new buildings
- Devolved utility budgets/charging

☺ Collaborating more closely with design/maintenance/projects team from an early stage and all the way through new build and refurb projects really pays off. Several universities seeing the benefit of contributing capital to "boost" projects that would have happened anyway, e.g. paying additional costs for lighting replacements to be LEDs

☹ Rapid growth of institutions with short timescales for builds and poor visibility of plans. Sustainability elements often removed during project as costs constrained. Big showy items e.g. solar panels kept to maintain green image but core building services value engineered to lower quality
☹ Research staff see sustainability agenda as low priority or not in their control, particularly labs. Utility budgets often small scale in comparison with research grants.

Targets/ambition

Group 1
- Most institutions focussed on 2020 targets

- Discussed value of interim targets; inc some with 2016 targets
- Agreed there is no driver from HEFCE now
- Discussed relative targets – by m^2, £ income, FTE (student/staff), inc whether there is correlation, and potential lag in change these parameters affecting CO_2 emissions
- Some moving towards relative targets, others going for combination and some still focussed on absolute targets
- Academics at Cardiff University develop 'intelligent' benchmarks per space usage type, to develop more intelligent benchmarks than standard whole building approaches (potential webinar?)

Group 2

- There is no policeman anymore (loss of HEFCE leadership)
  - Loss of interest from higher management
  - No issue with reputation
  - Carbon plan cannot influence academic & research impact on carbon emissions
- Limitation to energy efficiency on campus
- Need to decarbonise
- Need for a flagship project to mobilise attention and support
- How to quantify the social benefits
- Benchmarking

Group 3

HEFCE targets described as a "toothless animal". Very little appetite for similar thing going forwards.

- HEFCE don't have any power now to get Higher Education to move forward and meet their targets; what drivers do they have? Sustainability being lost as it's not seen as important now without this.
- Will the scorecard be more work or help out; there is news that People and Planet are planning to carry on with league;

Public and student perception is most important driver

Views round the table:
- All agreed targets should be stretching but achievable
- Most agree absolute targets are most meaningful, but accept significant challenges of allowing for growth
- Floor area and student + staff numbers both criticised as normalising factors, although agreed these are probably the best realistically
- Proposed using floor area and type of space as normalising factor, although difficult to standardise and more admin

Discussed relative merits of future target (40% by 2020) and rolling annual target (5% each year). Rolling annual target removes pressure of a single target year, makes efforts more consistent.

Monitoring & reporting

Group 1
- Regular reporting per building can help engagement/awareness
- UCL publish HH data online – particularly useful for staff who are already engaged
- Discussed idea of CO_2 per course type – linked with cost/course? *(idea only)*

- Report CO_2 per department – aspirational, but practically difficult to achieve
- Devolved budgets – most felt this might not be desirable?
- Good to be able to benchmark [buildings] against other institutions
- Need to consider evening/out-of-hours use when benchmarking
- Comparisons versus other institutions for overall progress – some like this while others don't. Making direct comparisons can be difficult
- Defra carbon conversion factors – can be a real challenge, especially for year-on-year reporting. Discussed whether these should be excluded completely, or reported as a separate line to assess the 'indirect' impact
- New GHG reporting guidelines – encourage reporting on 'bought' emissions (i.e. renewable tariffs) alongside 'grid average' emissions – this may further complicate reporting
- Some of original CO_2 targets are felt to have been overly-ambitious

Group 2

- Lack of reliability since there is no policeman
- The proposed AUDE scorecard is flawed in the same way as no verification will be imposed
- EAUC is supposed to develop phase 2 that would consider other sustainability aspects
- Lack of transparency in how data is accounted
- Green League may come back with funding?
- Q Should we share true anonymised data (the concept of The Curve)

Group 3

- AMR is some cases is becoming too much data
- How do people charge for heat is there a known calculation, Aston, Oxford and Reading seemed to differ. Plus there are variations in CO_2e calculations for heat based on what you require it for
- Targets: most agreed that you need to use absolute targets, an accurate baseline so doesn't have to be 2005/06 – Oxford use 2013/14, and emissions per FTE staff and student and per floor area m^2
- General agreement that whatever overall stated target is, a wider range of metrics should be used to communicate progress – including relative measures
- Discussion on metering availability, limitations, and tools. Systemslink or LComponent used by most, both have analytics and reporting capabilities
- Generally (as expected) universities with devolved energy budgets have greater communication of energy data with departments
- League tables widely used
- Discussion on pushing data out (monthly reports, league tables) vs making data available (web dashboards). Generally agreed that making data available is preferable as interest of different people around universities varies and people being fed info may not be the ones who are interested.

Planning for an evolving estate

Group 1

- Some plan for likely CO_2 impact of future estate developments – either from contractors or own calculations
- Key to get involved with design meetings at early stage
- Often a number of high-level projects from original carbon management plans not progressed
- Discussed benefits of prioritised work by building rather than by technology – strong change stories versus increased cost-effectiveness?

Group 2

- It is an opportunity although limited control on the standard of the building
  - Consolidation of servers in more efficient virtual servers and cooling
  - Or outsourcing servers
  - Bath (deployed Powerman to public PC's)
  - Use SCCM functionalities
- It is hard to know in advance what research is coming to anticipate and respond better
- Sustainable procurement?
  - Incentives are not in place and metering may be partial
  - Engage with procurement where possible
  - FEC (Full Economic Costing) - Whole life costing; not used
  - Equipment sharing; in place and in use (research council requirement for >£10k equipment)

Group 3

- New builds and major refurbs discussed in the morning. Reiterated importance of involvement all the way through the project, policing what is value engineered. Half of the group stipulate BREEAM excellent for new builds, although this is challenging due to cost
- Discussion about nature of evolving estate beyond just new buildings. Some universities are moving towards more flexible use of space, unsure what the consequences are for energy use but general agreement that it will make things more complicated (e.g. BMS settings)
- Diversification of buildings beyond university operations and increased external lettings seen by some but not others
- External factors e.g. city centre planning regulations – feeling that in some cases these create hoops to jump through rather than necessarily promoting the best investment from an efficiency point of view. Discussion about Gas CHP being classed as renewable in many cases.

Governance & leadership

Group 1

- Mixture of whether energy/sustainability in/out of maintenance and estates functions – some straddle both
- BMS management – those which have BMS within energy function see this as essential, while others without it saw this as less critical
- Existence/implementation of heating/cooling policies quite variable
- Carbon Management reporting lines varied:
  - Carbon Management Board
  - Sustainability strategy group
  - Estates & facilities committee
- Most report CO_2 progress annually; others have not, but plan to do so
- Old CM plans – mostly produced with Carbon Trust/external consultant support
- New CM plans – mostly being done internally, with limited external support (mostly with 2020 focus)

Group 2

- (Reading) lost carbon committee = loss of power / influence. PVC in charge of sustainability and environment (new ISO14001:2015)
- (Bath) good report to VC but limited to carbon and energy
- On average = low level of engagement with university governance

- Very few universities have devolved budget
- -80 degrees freezers

Group 3

- Discussion about how to get academics on board. Example where Heads of Department are nominated green champions (unsure of actual title). As expected, universities with devolved energy budgets see greater engagement from departments
- Discussion about committee structures at various levels. Generally good engagement with academic side of the university when both academics and support staff sit on same committees, less so when divide is right at the top
- Generally the way accountability is given to departments is through devolved budgets, few other examples of successful accountability e.g. through KPIs, tasks at high level. Green Impact or similar scorecards tend to be used at lower level
- Leadership support comes via two routes:
    - Project support, funding, headcount in energy teams
    - Engagement support, ensuring HoDs and all employees consider energy/sustainability to be important to them
- Peer to peer conversations between academics considered to be very valuable. Get a small number of bought in people spread around the university and they will spread the word.

Integration with wider sustainability strategies

Group 1

- Environment & energy management systems – drive for close integration, and should be complimentary, but some value in separate ownership
- Carbon management sometimes a board level KPI (but not wider sustainability goals)
- CSR plans are uncommon
- EAUC 'Life' framework used by an institution (holistic approach, inc welfare etc.)

Group 2

- (Bath) Peter Phelps does it alone. Senior governance not willing to engage in greening the curriculum until a group of academic started to implement a "global climate change week"
- (Reading) energy and environment policies in place but not overall sustainability. Many excellent schools but no integrated strategy
- (Aston) mandatory 2nd year Climate Change week
- (Reading) award for students for volunteering with the carbon team / accredited training for students employability
- (Leeds) embedded sustainability strategy
    - Carbon plan = some universities are updating a carbon plan to 2020 or 2026

Group 3

- Several universities keen to amalgamate lots of policies (energy, water, heating, waste, procurement, travel etc) into a single sustainability agenda / strategy / vision. Acknowledgement that in doing this need to be sure detail is not lost
- Branding seen as a challenge. University of Leeds used as a successful example where sustainability message is everywhere you look

- Discussion about what metrics can be used to monitor sustainability as a whole. General criticism of methods such as the People and Planet league. Little consensus about relative ratings of different metrics.