



**The 28th Meeting of the Department of Computer Science and Technology
Buildings and Environment Committee**

**11.00 – 12.30, Tuesday, 2 July 2024
Room FW11, William Gates Building**

AGENDA

Committee membership:

Prof Richard Mortier, Chair
Dr Piete Brooks
Celia Burns, Secretary
Thomas Bytheway
Dr Andrew Caines
Ali Digby

Gabrielle Gaudeau
Martin McDonnell
Daniel Porter
Malcolm Scott
Caroline Stewart

1. Apologies for Absence

Apologies have been received from Andrew Caines, Gabrielle Gaudeau and Piete Brooks.

2. Minutes

The minutes of the meeting held on 30 April 2024 are attached for approval (BEC-2024-07-02).

3. Matters Arising

4. Reducing Energy Consumption

(a) Monitoring energy consumption. Ali to report on energy usage data.

(b) Recording energy use and solar panel contributions. The solar PVs had been switched on and were powering the building, but an adjustment was required in the server room. Ali to report on the status of the adjustment.

5. Building Matters

a) Department Café *

The café space is to be franchised out. Ali has reported that a meeting with Procurement is planned.

b) Drinks Vending Machine *

Ali has reported that the out-of-action drinks vending machine has now been removed.

c) Snacks Vending Machine

Following a request to look into more healthy options for the snacks vending machine, Ali has reported that Cambridge Vending supply their own goods for the machine, and to influence the contents we would need to change our rental agreement and stock it ourselves.

d) Lighting

i) LED upgrade

Ali to report on the status of the LED upgrade to the lecture theatres and the ground floor (not including the library space).

e) Verex security system

The Verex security system is running on old software and at significant risk of failure. Malcolm to report on the status of the new security system to be employed in the William Gates Building as UIS's proof of concept project.

f) Building management system (cooling and heating) *

Heating problems: the heating issues are long term, with the building not capable of producing a comfortable working environment for some areas even when it is working as optimally as it can. A document outlining the background to the heating problems and possible mitigations was circulated on 8 May 2024 to all Departmental staff for information (BEC-2024-07-5(f)). Ali has reported that data from the new system will be evaluated once she had returned from leave and had access to the BMS system following the upgrade. This data will be more accurate.

g) Re-fit of the WGB Library *

The Head of Department had asked the Committee to check that the re-fit proposal still meets our needs. Ian Lewis (a member of the library refit project committee in 2021) will be joining the BEC in the next academic year; this item will be addressed then.

h) Clearing of FN11 Machine Room

There is now only non-sensitive equipment left in the room and removal of the remaining items has begun. Malcolm to report.

i) Downpipe Leaks *

Ali has reported that this issue has again gone back to the surveyors with new pictures and videos taken by her, and there is no further news.

j) Portable Appliance Testing (PAT) *

Ali has reported that the general testing of the building will be raised at the Health and Safety Committee and that she will contact the Safety Office.

k) Generator Provision for GN09

There had been a suggestion to run a cable from UIS's Roger Needham Building generator, but there are now plans for alternative occupancy of the Roger Needham Building. Are Committee members content for this item to be removed from the agenda?

l) Improvements to the Ventilation and Extraction in the Hardware Lab

Thomas to report on the status of his plans for possible improvements to the ventilation system (BEC-2024-07-5l).

m) Visitor Car Park – Lockable Bollards *

Ali has reported that installation of the six lockable bollards (for three parking spaces) will be carried out soon.

n) Refurbishment of the Audiovisual Systems in the Lecture Theatres and FW26

Daniel to report on the status of the refurbishment works scheduled for the week commencing 22 July 2024.

o) Ground Floor Showers *

Ali has reported that the ground floor showers are still not fixed. Equans and CPS have visited again, and the job is being processed.

p) Pool Table *

Ali has reported that she will try to get the pool table baize replaced before the start of the 24/25 academic year.

q) Building Management System (BMS) Project

Ali to report on the status of the BMS project (scheduled to have been completed by the end of May).

r) Meeting Pods

At its recent meeting, the Research Staff Forum discussed meeting pods and asked Andrew (the Forum's B&EC Rep) to raise the request for more pods.

s) Smoking/Vaping by the Cafeteria Area

Andrew has asked if some signs could be put up to make it clear that the outdoor area by the café doors is not a smoking area. Smoke floats into office windows on that side of the building.

t) Use of the Garden on the South Side of the Building

Andrew has asked if we can make use of the garden on the south side of the building as a quiet place. He notes that it is a nice sunny spot, well maintained with grassy areas, but it is currently fenced off. It could be made clear at the entrance that it's a quiet space, so as not to disturb people working in the offices on that side of the building.

6. Whittle Extension

Caroline to report on Engineering's long-term plan.

7. Equans *

As noted in the [17 May 2024 Operational Round-Up](#), the current contract with Equans will finish at the end of November 2024. This item can now be removed from the agenda.

8. Out of Hours Use of Rooms on the Public Side of the Building

The Head of Department had asked the Committee to propose a Departmental policy for the use of rooms on the public side of the building during out-of-hours periods. Caroline to report.

9. The Proposed Cambourne-Cambridge Busway *

The proposed busway was discussed by the BEC at its April 2023 meeting. Andrew has highlighted, for information, a notice in the latest (26 June 2024) Reporter that notes that, further to its [Notice of 30 May 2024](#), the Council has received comments on the disposal of land at West Cambridge for the Cambourne to Cambridge busway and has agreed to add this matter to the agenda of the next Discussion on 9 July 2024. Instructions to join the Discussion are available [here](#).

10. Student Feedback

Gabrielle has sent apologies for this meeting but may pass on some student feedback before the meeting.

11. Any Other Business

12. Date of Next Meeting(s)



**The 27th Meeting of the Department of Computer Science and Technology
Buildings and Environment Committee**

**11.00 – 12.30, Tuesday, 30 April 2024
Room FW11, William Gates Building**

MINUTES

Present:

Prof Richard Mortier, Chair

Dr Piete Brooks

Celia Burns, Secretary

Thomas Bytheway

Dr Andrew Caines (from 12.00)

Ali Digby

Gabrielle Gaudeau (from 12.00)

Martin McDonnell

Daniel Porter

Caroline Stewart

1. Apologies for Absence

Apologies were received from Malcolm Scott.

2. Minutes

The minutes of the meeting held on 22 January 2024 were approved.

3. Matters Arising

There were no matters arising.

4. Reducing Energy Consumption

(a) Monitoring energy consumption. Ali reported that she had received confirmation that she will be able to acquire historical energy usage data.

(b) Recording energy use and solar panel contributions. Ali reported that the solar PVs had been switched on and were powering the building; however, there was a communications issue which required an adjustment in the server room (which could potentially involve switching the power off, but Ali was hoping this would not be necessary). The adjustment was related to incorrect current transformers having been installed by the contractor. The communications panel shows power coming in from the panels but not what is coming in from the grid.

5. Building Matters

a) Department Café

Ali reported that she is working with the Procurement section on the tendering process for franchising out the café space.

b) Drinks Vending Machine

Martin and Ali reported that removal of the out-of-action drinks vending machine will be included in the general removal of University Catering Service equipment from the building.

Action: Ali and Martin

c) Lighting**i) LED upgrade**

Ali reported that the funding for the LED whole-building upgrade (originally planned for Summer 2024) had been pulled, but there was some sustainability money available—not enough to do the whole building upgrade but enough to do the lecture theatres and the ground floor (although the Department will not be including the library space). The plans are currently with the Quantity Surveyor for costing. A timeline is not yet available.

d) Verex security system

The Verex security system is running on old software and at significant risk of failure. UIS are using the William Gates Building as proof of concept for their new central security system. Daniel reported that Malcolm (who had sent his apologies for this meeting) is reviewing vendor proposals from UIS.

e) Building management system (cooling and heating)

i) Heating problems: the heating issues are long term, with the building not capable of producing a comfortable working environment for some areas even when it is working as optimally as it can. Richard had prepared a document (BEC-2024-04-05e) outlining the background to the heating problems, possible mitigations, and a conclusion. The Committee discussed the possible mitigations and agreed that Richard would amend the document to reflect the discussion and then provide it to the Head of Department with the proposal that it be circulated to the Department for information.

Action: Richard

f) Refit of the WGB Library

Ali had not had a response from the surveyor for this project and Richard had not had an opportunity to follow this up with Graham Matthews (Director, Estates Division) again. Caroline noted that the Head of Department had asked the Committee to look at the refit plans to check that the proposal still meets our needs. It was agreed that Caroline would locate the plans for the Committee to review.

Action: Caroline

g) Clearing of FN11 Machine Room

Richard reported that he had notified people that there was now only non-sensitive equipment in the room and a few people had expressed an interest in checking out whether anything left was salvageable. Martin reported that the removal of the remaining items had started but some items in the central rack might need disconnecting first, under Malcolm's guidance.

Action: Malcolm and Martin

h) Downpipe Leaks

Ali reported that this issue has been a cycle of her being asked to provide photos of the pipes, different companies diagnosing the problem, and nothing actually getting fixed. It was agreed that Ali would copy Richard on any future correspondence about this issue.

Action: Ali

i) Portable Appliance Testing (PAT)

Ali reported that at the recent safety audit, she had learned that the Safety Office has provision to carry out the testing and she will, therefore, contact them to arrange the general testing of the building.

Action: Ali

j) Generator Provision for GN09

Chris Purnell (Estates) had suggested running a cable from UIS's Roger Needham Building generator and getting Estates plus both departments and their surveyors to discuss this idea. This item is currently on hold as there are now plans for alternative occupancy of the Roger Needham Building.

k) Improvements to the Ventilation and Extraction in the Hardware Lab

Thomas reported that he had not yet had the opportunity to put some information together about improvements to the ventilation system to present to the Head of Department.

Action: Thomas

l) Visitor Car Park – Barrier and Lockable Bollards

Ali reported that six bollards (for three parking spaces) have been received and will be concreted in when the weather permits.

m) Refurbishment of the Audiovisual Systems in the Lecture Theatres and FW26

Daniel reported that the refurbishment works scheduled for the week commencing 22 July 2024 are proceeding to plan.

n) Decommissioning of Plain Old Telephone Service (POTS) phones

Ali reported that Estates are taking care of updating the Redcare emergency line to a non-analogue system. The lift phones will continue to work since they have already been changed to a non-analogue system. This item can now be dropped from the agenda.

o) Ground Floor Showers

Andrew had raised the issue of maintenance/repairs required to the ground floor showers. Ali noted that she had initiated these works through a ticket to Equans early in January 2024. Someone had come out to quote for the job and although no work had been carried out, on 22 February the work status in the Equans system had been updated to 'complete'. When Ali queried this with Equans, she was told that the 0.1 version of the works had been completed and that they were now on version 0.2 of the works. Nothing further had happened regarding the showers. Martin and Ali noted a few more examples of this Equans system of ticketing. Mort said he would ask the Head of Department to take this issue to the School and Caroline said she would ask School Administrators about it.

Action: Ali, Alastair, Caroline

p) Pool Table

The baize on the pool table needs replacing. Ali said she would follow this up.

Action: Ali

6. Electricity Devolution Project (EDP)**(a) Solar panels**

Ali reported that, apart from the incorrect current transformer issue discussed in item 4(b) above, these works were complete, and this item could now be removed from the agenda.

7. Whittle Extension

Richard, Caroline and Ali had met with the Department of Engineering about plans for the Whittle Building. Caroline reported that they had been surprised about the lack of consultation with our department. Things had since improved, but we still do not have information about Engineering's long-term plan. Caroline said she would contact them about this issue.

Action: Caroline

8. Equans

Richard reported that he had not yet had an opportunity to respond to Andrew Smart (Director of Operations) about the issues with Equans' ticketing system. He agreed to collate some evidence and follow up with the Head of Department and Andrew Smart.

9. Out of Hours Use of Rooms on the Public Side of the Building

The Head of Department had asked the Committee to propose a Departmental policy for the use of rooms on the public side of the building during out-of-hours periods. Requests for use of the rooms have been largely but not solely from students.

The Committee discussed a potential policy and agreed that a shared document should be set up for Committee members to contribute to before providing it to the Head of Department. Ali said she would ask Security if they were aware of other Departments having a similar policy and Caroline said she would ask School Administrators if they had similar policies.

Issues discussed included:

- Criteria for what kinds of event/request the policy applies to (requestor, number of participants, etc)
- The requirement to have a designated responsible host
- Eligibility to be a designated responsible host (e.g. a UTO)
- Possible requirements for the host to undertake (e.g., online fire training, etc.)
- Logistical issues (e.g., programming of doors, potential first-aid requirements, circulation of contact details for host / Building Services Manager / Building Services Coordinator, etc.)

Action: Ali, Caroline, other Committee members

10. Student Feedback

Gabrielle reported on feedback that she had received from fellow students, including:

- A leaking room. Ali noted that this was an ongoing issue that was being addressed.

- A request for healthy options in the vending machine. Ali said that she would look into this.
- A request for a simple stationery storage cupboard for when Stores is closed. The response was that, as this had been tried before—and abused—students should be encouraged to get what they need from Stores during the day.
- Unused common areas and limited office space. This prompted a brief discussion about low building occupancy in general.
- Heating. This had been discussed above in item 5e) i).
- Invisibility at the crossing. It was noted that revisions to the hoarding and pavement coating had already been made.

Action: Ali

11. Any Other Business

Building Management System (BMS) Project.

Ali reported that, since the last committee meeting, the BMS project had been commissioned and started, and was scheduled to be completed at the end of May.

12. Date of Next Meetings

The next meeting will take place from 11.00 – 12.30 on Tuesday, 2 July 2024.

Sent to department-members@cst.cam.ac.uk

Heating in the WGB

8 May 2024

Prof. Richard Mortier, with thanks to Ali Digby (Building Manager)

1. Background

- 1.1. The WGB was designed at a time when computers generated more waste heat (higher-power desktops, CRT monitors, etc.), and was assumed to be part of what would heat offices. Current flat panel displays and laptops output far less heat.
- 1.2. WGB heating logically splits in two: teaching spaces (e.g., LT1, LT2, FW11, FW26) have hot water radiators supplied by gas boilers but the rest (i.e., most offices) do not.
- 1.3. Non-teaching spaces were intended to be heated by CRT generated waste heat, which no longer exists, and warm air introduced through floor vents.
- 1.4. Heating and cooling via the floor vents is provided by a [Thermal Wheel](#). This is not a particularly effective way to heat the building when the weather is cold.
- 1.5. Offices are cooled via ceiling-mounted chilled beams through which cold water runs creating cold air. Running warm water is inefficient and ineffective because heat rises.

2. Possible mitigations

- 2.1. The current mitigation in place is to provide office occupants with mobile electric heaters. These do provide heat but are not ideal as they create health & safety risks (e.g., fire risk if left on overnight or with items such as coats draped over them). They are also inefficient and, data suggests, lead to office temperatures varying significantly, e.g., SN04 was uncomfortably cold (16°C) for an extended period, becoming uncomfortably warm (25°C) once a heater was introduced.
- 2.2. We are also assuring that the thermal wheel is operating as effectively as possible, but it is not designed to provide building-wide heating. Alternatives considered include:
- 2.3. Extend the hot water heating from teaching spaces to offices.
The current boilers are almost certainly not able to deliver the heat output that such an extension of the existing system would require. Very expensive and disruptive.
- 2.4. Install solar heated hot water panels on the roof to provide hot water for heating.
Not possible due to the recent installation of PV solar on the roof.
- 2.5. Install electric panel heaters properly in offices.
Concerns over infrastructure and building supply capacity. Expensive and disruptive.
- 2.6. Provide electric heaters in each office.
Currently done on demand. But note the possible power circuit issues, above.
- 2.7. Recover heat generated in the GN09 machine room into the air vent systems.
We are exploring this, but it is unlikely to have a significant effect.
- 2.8. Install ground source or air source heat pumps to provide heat to the building.
Being explored but will be costly and disruptive, and will take considerable time.
- 2.9. Use the existing air ventilation system for heating.
If the intake air to the building were heated, perhaps via existing radiators or newly installed heat pumps, then it could be delivered to offices through the air vents. This should be the least disruptive though existing vents may need rebalancing.

*Heating the WGB***3. Conclusion**

3.1. We are investigating several options:

- 2.9, using the ventilation system to deliver warm air to offices. First need to determine whether there is sufficient heating capacity at an appropriate point on the air intakes to the building.
- 2.4, installing electric panel heaters in offices. Will be costly and disruptive, and requires that we first satisfy ourselves that the electrical infrastructure and input power to the building can sustain this.
- 2.7, heat recovery from GN09. Probably best done via the chiller on the roof, if possible.

3.2. We will also pursue the matter with University Estates to see what they can provide.

3.3. In the meantime, if your office is too cold please request a heater from building-services@cl.cam.ac.uk. It may also be helpful to request sensors to be installed so that we can monitor the temperature more accurately than the existing Building Management System allows.

Hardware Lab Workshop Expansion

Issues

- Space in the current facility is severely limited, there are many pieces of equipment in storage which makes it hard for researchers to be aware of what exists and complicates use.
- After surveying researchers who use the facility on their desires with regard to the facilities capabilities the results were universally in the direction of expanding equipment for small scale fabrication work, especially around working with aluminium profiles.
- However, such metalworking presents a hazard to sensitive electronic work, as the metal dust created from sanding/cutting/drilling contaminates the room it's in.

Proposals

- The desired list of equipment for fabrication includes but is not limited to the following (starred items are already owned by the department, though not well placed for use or in storage):
 - Pillar Drill*
 - Bench Drill*
 - Mitre Saw*
 - Scroll Saw
 - Jigsaw
 - CNC router/mill
- The best available route to meet this need would be an expansion of the workshop facilities on site, preferably in a ground floor location to allow for heavy equipment to be moved into place more easily.
There is also the option that the laser cutter could be relocated to such a facility, which would free space in the current hardware lab for electronics and 3d printing work.



