The University of Nottingham

UNITED KINGDOM · CHINA · MALAYSIA

POST OCCUPANCY EVALUATION REPORT

BIOENERGY & BREWING SCIENCE BUILDING



QTC projects

FEBRUARY 2014

FINAL

1. Introduction

QTC Projects were appointed to carry out the Post Occupancy Evaluation following the submission of a fee proposal for services dated 29 October 2013 to the Development Director, University Estate Office.

2. Scope of the Review

Evaluation Technique

The evaluation was conducted at Project Review stage (1-2 years after handover) and has been undertaken in line with the criteria and guidance contained in the HEFCE/AUDE publication, 'Guide to Post Occupancy Evaluation'.

Analysis

Analysis broadly followed the University's brief for undertaking the evaluation and consisted of reviewing all written information received concerning the building together with information collated from the questionnaires and workshop. Particular areas reviewed were:

Purpose and scope of project (brief)
Some aspects of the building procurement process
Building user feedback
Cost management and control
Construction and project management
Functional and technical performance
Sustainability - Assessment against BREEAM criteria (limited due to non-completion of BREEAM final accreditation)
- Review of energy efficiency measures incorporated into the design

The review of construction and project management is limited in this evaluation due to the main contractor going into administration and the decision made by the consultant project manager not to participate in the review and which impacted across a broad number of issues.

Questionnaires

Questionnaires were developed to obtain information and feedback from four specific groups:

a) User (On-line survey)

- a representative sample of 37 users of the building being evaluated consisting of Academic/Admin/Post Doc staff and PGR students

b) User Client (representing School of Biosciences)

c) Consultant Design Team:

- Architect
- Quantity Surveyor
- Services Consultant
- Structural Engineer

d) Estate Office – Development
- Facilities & Operations

A Sample of the User Questionnaires is shown in Appendix 1.

Interviews

Interviews were held with the following:

a) Food & Biofuel Innovation Centre
- Dr Jerry Avis, Project Manager

b) Estate Office
- Tim Brooksbank, Development Director

c) Gaskells Cost Consultants
– Dick Eite
- Dean Williams

d) Maber Architects
- Alex Lipinski

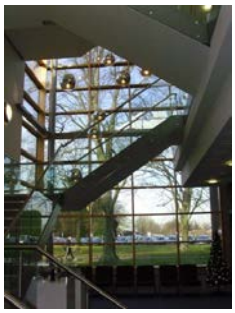
Workshop

A half day workshop was held on 27 January 2014(a list of attendees is shown in Appendix 2).

The format for the workshop was a presentation by QTC Projects acting as facilitator which included feedback from the user satisfaction questionnaires. The workshop helped to highlight the key issues that had been raised in the questionnaires and interviews which were then discussed and debated.

The information from the workshop provided important comment which has been incorporated into this report.





3. Building Data

Name	BioEnergy and Brewing Science Building
Size	3200m² (Gross Area)
No of Storeys	3 storeys
Occupants	School of Biosciences SAB Miller plc
Types of space	Offices (cellular and open plan) Post Grad/PhD/Post Doc office space Meeting rooms Staff/PG Common Room Brewery & Nano-brewery Food Sciences & related areas Laboratories
Construction Period	50 weeks
Contract Completion	21 March 2011
Practical Completion	21 March 2011

Gross Development Cost

At Start of Construction	£6.5m
At Final Account stage	£6.71m (including additional works)
Funding	University and ERDF

Consultant Team

Project Manager	Sand Project Management, Birmingham
Architects	Maber Architects, Nottingham
Cost Managers/QS	Gaskells Cost Consultants, Nottingham
Services Engineer	Edmund Shipway, Nottingham
Structural Engineer	Price & Myers, Nottingham
Contractor	Baggaley Construction, Nottingham
Building Contract	JCT Design & Build 2005



4. Project Background and Description

The new building is located on the University of Nottingham's Sutton Bonington campus and provides accommodation relating to four components: Bioenergy, Food Technology, Brewing Science and an external major Brewing Company.

The building comprises research and teaching laboratories, a food sciences hall, nano and pilot brewing areas on the ground and first floors with the third floor devoted to cellular and open plan offices for staff and post graduate students. SAB Miller, the major Brewing Company operate from a double height brewery space on the ground floor.

Internally, prefabricated glulam timber beams form a dominant design feature over the double height spaces and externally, add to the articulation of the main entrance canopy and lakeside elevation.

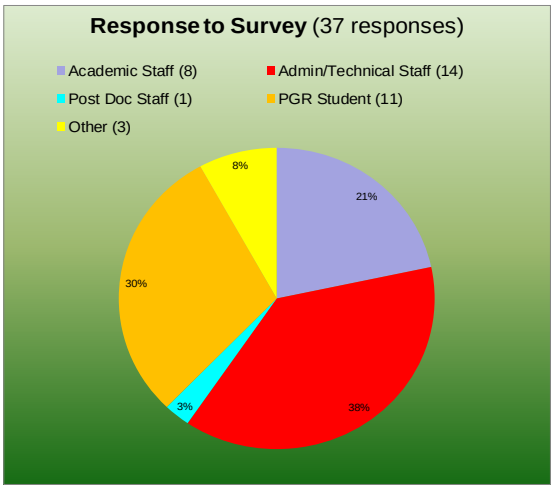
The beams support a metal curved roof south wing which interlocks and contrasts with the simple brick clad three storey north wing. A landscaped lake wraps around the building which provides a valuable wildlife habitat and helps to attenuate rainwater from the building.

The final design was selected following a design competition issued in January 2009 based on a gross budget of £7m. Following receipt of tenders, the gross budget was reduced to £6.5m. The building was completed in March 2011 with the final outturn project cost within agreed budget tolerances.

5. User Satisfaction

Building user satisfaction has been assessed from the responses to the on-line questionnaires received and analysis of the comments made. The results are shown in a series of bar charts covering the following areas:

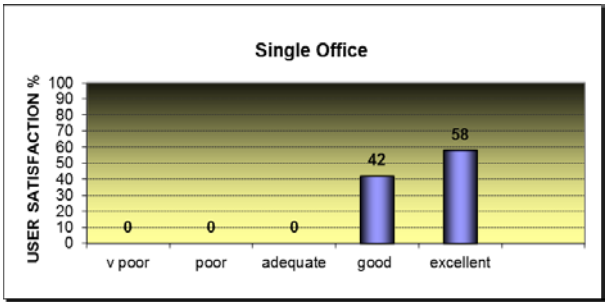
- Satisfaction with specific room types, ie shared and cellular offices, meeting rooms, teaching labs, specialist research labs, brewing and food sciences areas and overall impression of the building
- Security
- Cleanliness
- Internal room temperature
- Distraction from noise
- Lighting conditions, natural and artificial
- Data connectivity at the workspace
- AV equipment in teaching/lecture rooms

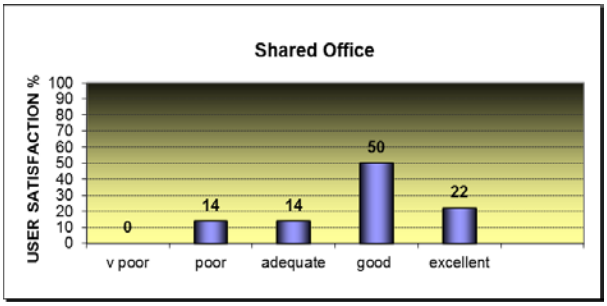


Overall, 37 responses were received from a representative group comprising academic/research/Admin and PGR students.

Users were asked to give a response on their overall impression of the building and this has shown a high level of satisfaction. 70% of respondents rated the building good to excellent.

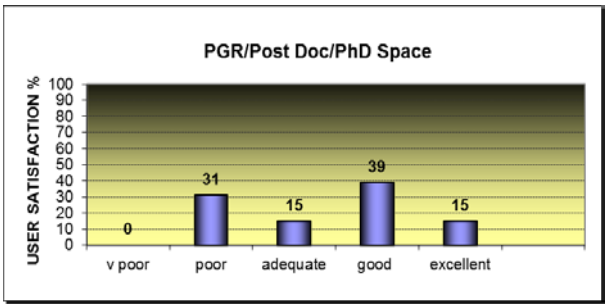
The single offices in the building comply with the University's space norms and provide good accommodation. This is reflected in the responses with those occupying the offices rating them good or excellent (58% rating them as excellent).

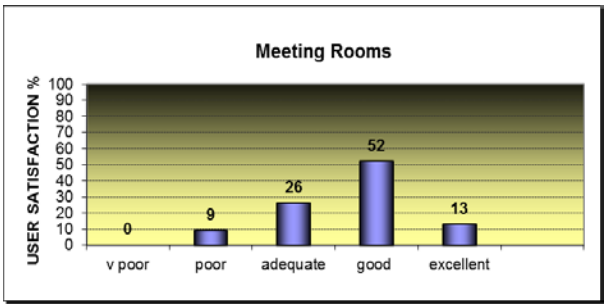




The shared offices had a range of responses with less satisfaction compared to the single offices. This is due mainly to the distraction caused by working in a shared space.

There were similar comments made concerning the PGR/Post Doc/PhD office space with 31% of respondents rating the space as poor.

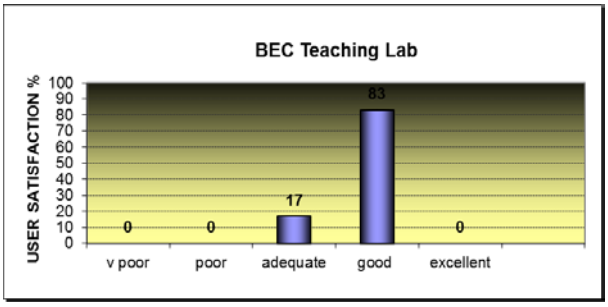


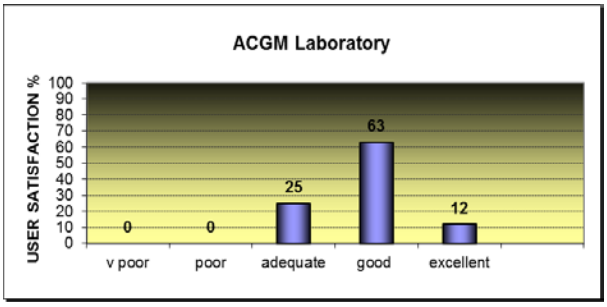


There are three meeting rooms in the building, one on each floor. Although 65% of respondents rated the meeting rooms as good or excellent, there were some negative points made:

- *Lack of meeting rooms for confidential meetings for those of us in shared offices can be irritating*
- *Lack of adequate blackout facilities in Meeting room C*
- *Lack of meeting rooms for those working in shared office*

It is understood that blackout blinds have now been fitted to windows in the meeting rooms where glare and reflective light have been a problem.

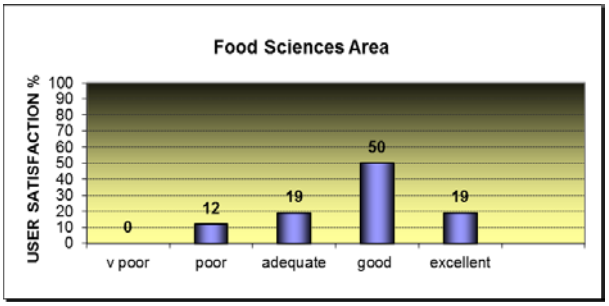


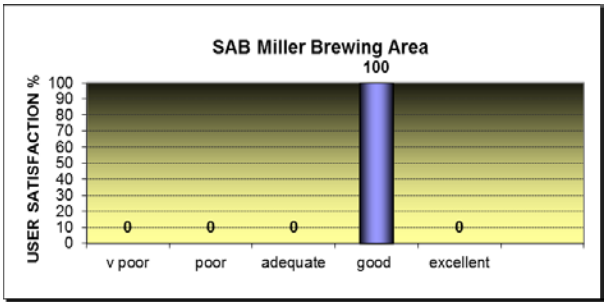


There was a good response from those who use the teaching and research laboratories with no negative scores. Generally the laboratories are considered fit for purpose.

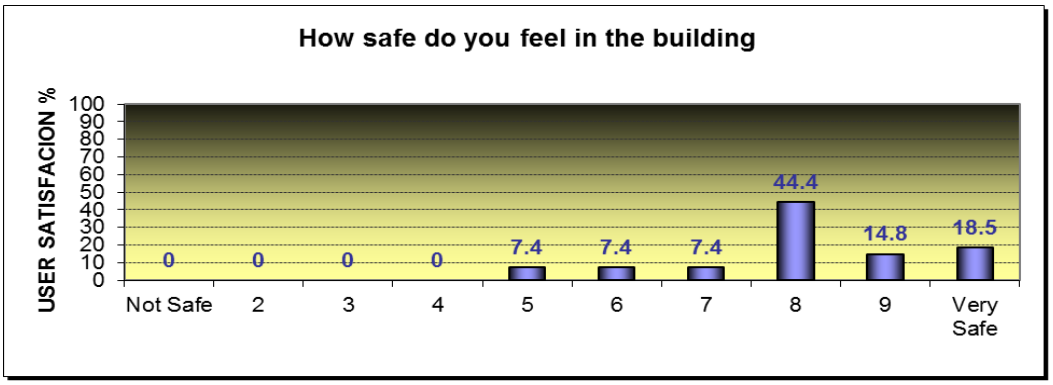
However responses on the level of satisfaction with the Food Sciences Hall produced a more varied response with 31% considering this space as adequate or poor. This is mainly due to the temperatures in this area which are reported as getting far too hot in summer.

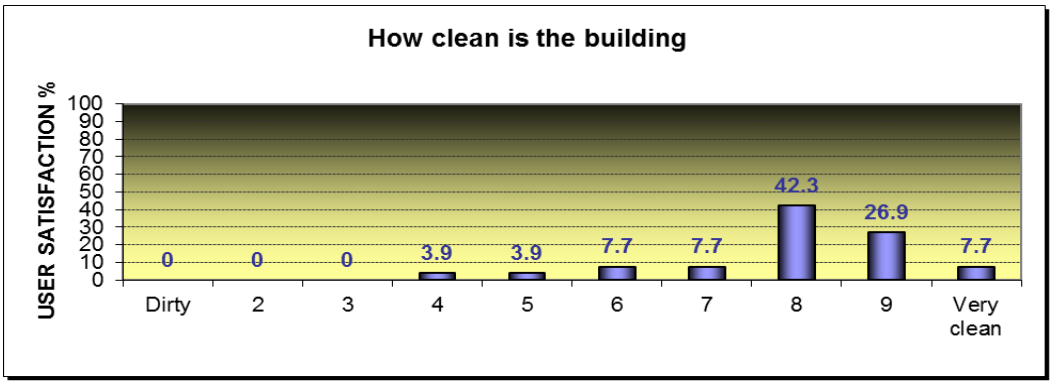
In contrast, respondents were very satisfied with the Pilot Plant areas and the SAB Miller brewing area.



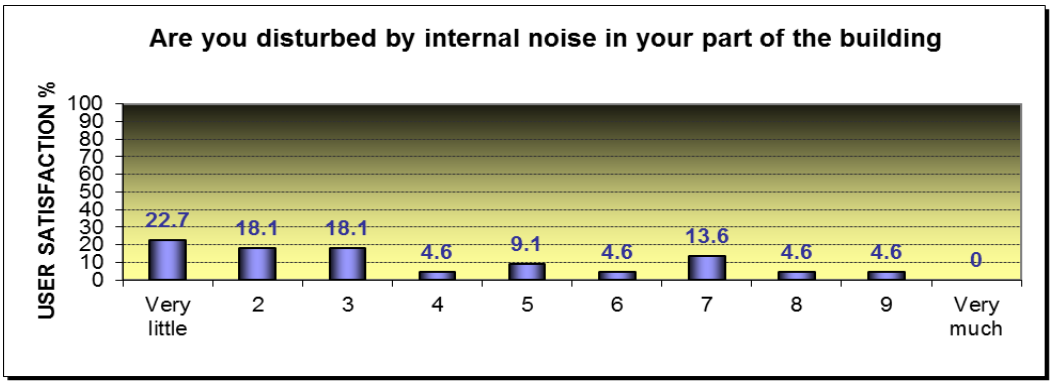


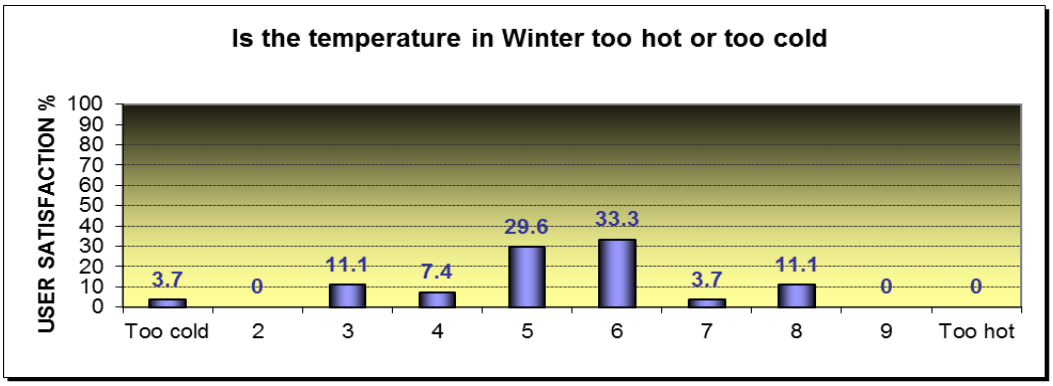
Looking at the charts for building amenity and comfort, most users felt safe in the building and cleanliness was considered good overall.





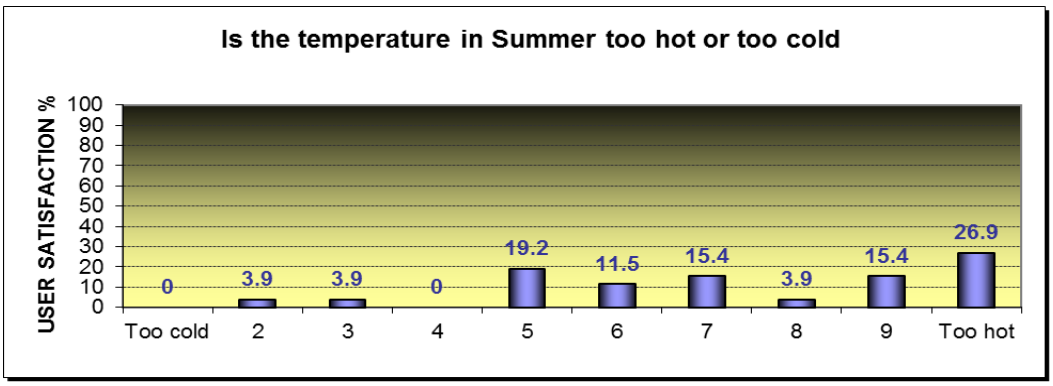
The response to the disturbance from noise question presented scores across the full range but on balance there were less respondents who were disturbed by noise (27.4%) compared to those who were on average unaffected by noise (72.6%).





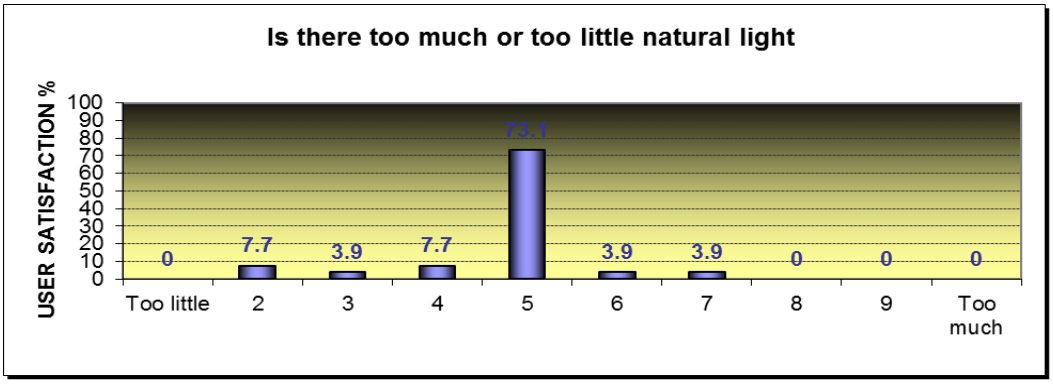
Regarding temperatures in the building, the charts show that for winter, 38% of users felt on the cold side. Comfort levels in summer show a much greater level of dissatisfaction particularly in the Food Sciences Hall. Some of the written comments submitted by users are shown below:

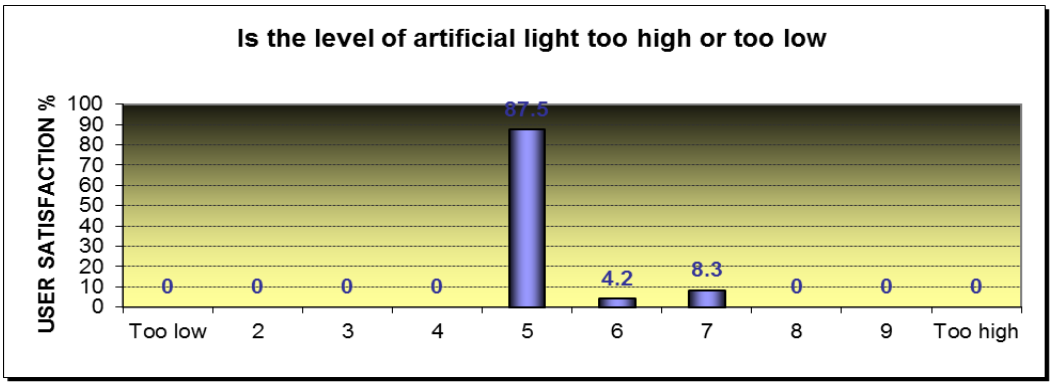
- *South Side of Building gets too hot in Summer*
- *The office is okay but the food processing facility is too hot*
- *Food hall is far too hot in summer. It makes it difficult to work in there when the weather is warm, which happens regularly in summer*
- *The Food Processing Area is hot in winter and unbearable in summer- particularly when there are practical classes on.*
- *Don't know re cold as always hot or too hot in the food hall*
- *Food Processing Facilities - it is ridiculous that the temperatures are not better controlled.*
- *FPF main hall gets too hot in the summer*



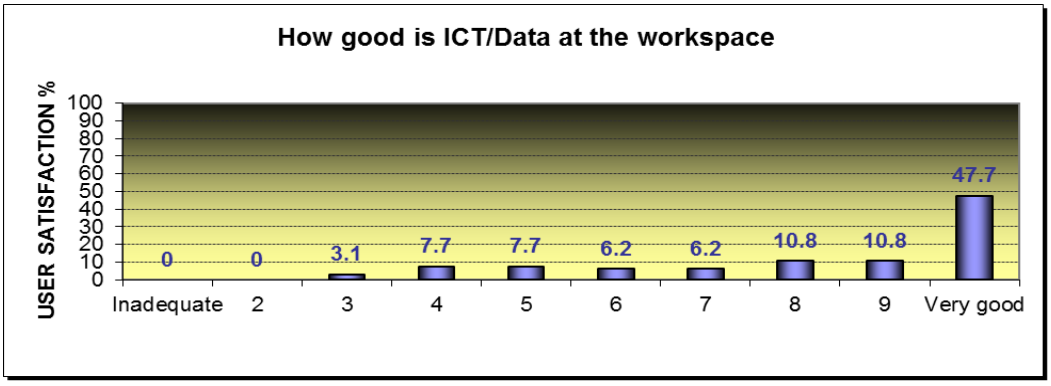
The charts for levels of light show a high degree of satisfaction for both natural and artificial light. However, there were some adverse comments relating to the level of glare and reflection on computer screens:

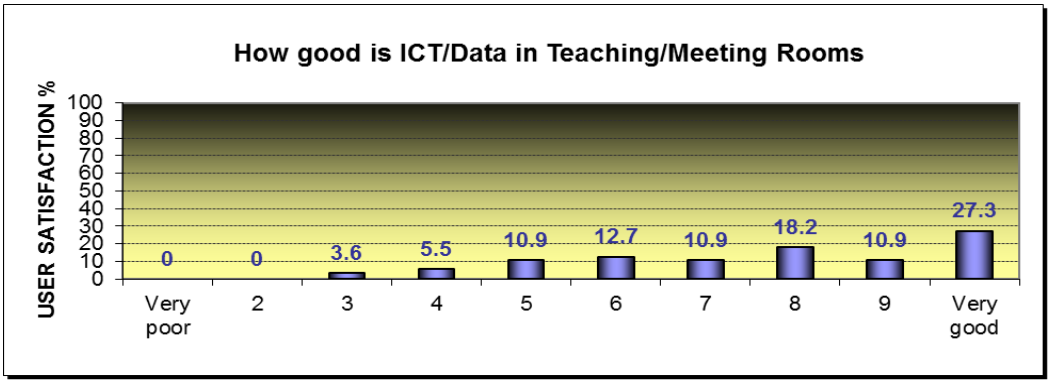
- *Someone needs to sort out blinds; it is the reflected light that needs resolving*
- *Basically no natural light as when the sun is shining all curtains need to be closed to avoid reflection on the pc screens*
- *Again what is the point of screen where the reflected light is so bad you can't see them*





The scores on how good the ICT is at the workplace were more or less across the full range although 90% presented a positive score.





The response for the standard of AV equipment showed a more even range of scores across the board. No specific written comments were made relating to the level of dissatisfaction except for the lack of blackout blinds which has now been rectified.

Resulting from the questionnaire responses, interviews and various discussions, a number of issues have been highlighted and were presented at the POE workshop for further discussion/debate. The issues have been grouped under the following headings and considered in more detail in this report.

- User/Design Issues
- Construction Issues
- Facilities and Operations
- Project Management
- Procurement and Cost Management
- Sustainability

6. User/Design Issues

A number of user issues were raised during the interviews and from the questionnaire returns which were discussed at the workshop. These are listed below and commentary given.

Design Brief and User Consultation

The design brief was developed and issued by Sand Project Management as part of the competition brief for the selection of the Architects. This was an outline brief with the intention of developing it into a detailed brief in consultation with the intended key users of the building.

The user representatives relating to the food sciences and brewing areas left the University during the progress of the design development and at this stage there was no single point of contact on the user client side.

Relationships with the external user could have been better in defining and developing their brief requirements at an earlier stage in the project. There were significant deficiencies in the original power/steam/chilled water requirements once the full equipment demands were known.

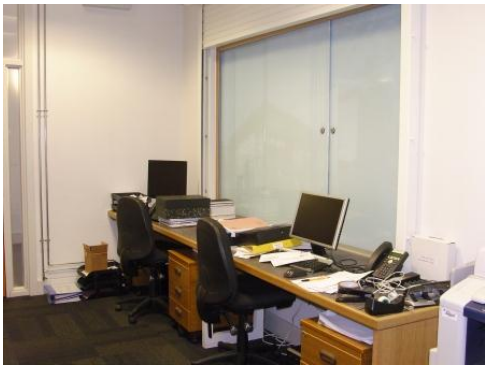
Regarding user consultation, not all users necessarily have an understanding of what information is required of them and interpretation of room data information can sometimes be difficult. User expertise in this regard also varies from one individual to another. Some guidance and explanation is therefore needed for some users at this stage through support given by the Architect and Project Manager.

Planning

There were no issues relating to the initial planning submission to the Local Authority and subsequent approval. The location of the site for the development was embedded within the campus and did not therefore have any impact on the external areas around the campus. The Local Authority was fully supportive of the scheme.

Reception Area

The reception area was designed on the basis that greeting of external business representatives would be an important part of the building's function and therefore a reception was considered an important design element at the time. However this external engagement with businesses has not happened in the way it was originally intended and the reception has become unnecessary. This space is now used as an office.



◄ **The reception which has now become an office**

Schools/Departments' use of receptions is difficult to predict at project design stage. The design brief on reception areas therefore needs to be made clear at the earliest opportunity and some flexibility built into their design.

Food Sciences Hall

User comments were made regarding the need to retrofit additional floor drainage in the form of drainage channels. It was pointed out at the workshop that this was not a design omission. A floor drainage scheme was in the design which had been signed off by the user client.

It is noted that the window frames to the Food Sciences Hall are of timber construction and some users have commented that this specification is inappropriate and does not meet cleanliness standards for the activities carried out. Again, it was pointed out at the workshop that this room was designed with some flexibility in mind and the specification was never intended to meet food factory standards.

Most of the user comments on heating and excessive temperatures relate to the Food Sciences Hall. The problems occur during warm weather and the number of comments raised by users on this issue warrants further investigation.

Depth of Laboratory Benches

The decision was made by the user client to have some laboratory benches deeper than standard bench tops in order to accommodate larger pieces of equipment. This has meant that reaching the bench top gas taps is difficult for some people. This needs to be taken into account when bespoke bench units are specified.

Natural Light/Glare

Natural light is considered adequate throughout the building but the level of glare and reflection on computer screens makes working in some offices difficult. This needs to be investigated with possibly some anti-glare film applied to windows in the affected areas.

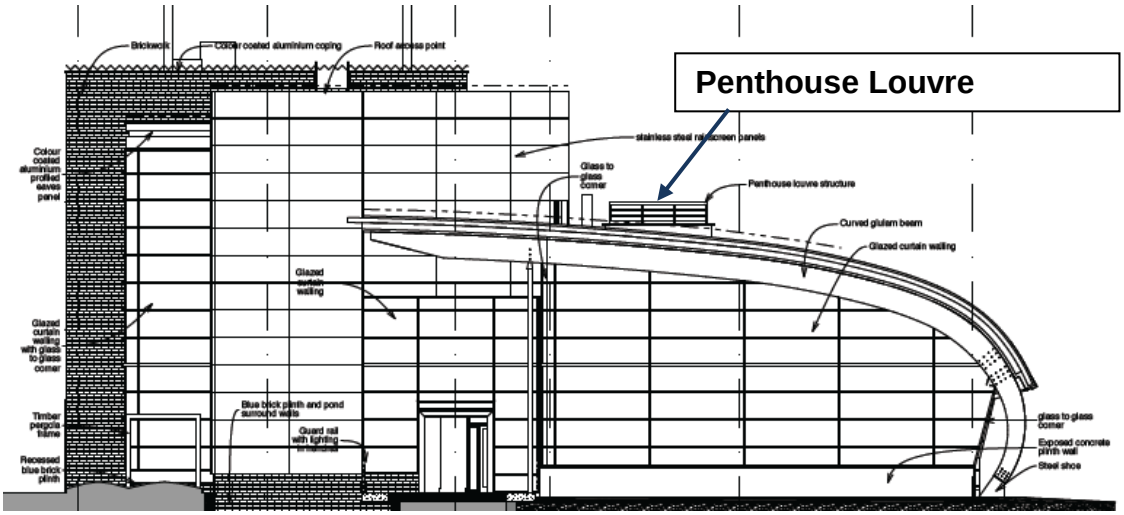
Biomass Boiler location

The building's heating supply is generated partly by a biomass boiler located at the rear of the building. In the early stage of occupation some problems occurred with the operation of this area. Due to a malfunction of the hopper feed, a build-up of wood pellets caused a small fire. This was dealt with promptly at the time and the faults rectified. Where biomass is being considered on future schemes thought should be given to locating the plant in a separate building.

There were also early problems with the amount of dust generated by the wood pellets activating the smoke detectors. Changing the detectors to the heat sensing type has resolved this problem.

Penthouse Louvre

The penthouse louvre installation was a late design change which required an amendment to the planning approval. This came about due to inadequate ceiling void space to accommodate the mechanical services once full design specifications and layouts had been produced by the main contractor's mechanical subcontractor.



The Design and Build contract allows for the contractor and his team to complete the design post tender. It is the contractor's responsibility to appoint the M & E subcontractors at an early stage and co-ordinate and conclude the design. This did not happen on this project resulting in some co-ordination issues and additional design work.

Recommendations

Design Brief and User Consultation

a) Ensure, where appropriate, that relevant users are involved in the development of the design brief at an early stage

b) Where possible designate a single point of contact on the user client side at the commencement of the project

c) Provide guidance to users on what information is required from them together with the interpretation of room data sheets

Reception Area

Ensure that the design brief on reception areas is made clear at the earliest opportunity and some flexibility built into their design

Food Sciences Hall

Investigate the problems of excessive temperatures which have been commented on by users of this area. Checks on the ventilation system and temperature sensors should be made

Depth of Laboratory Benches

Ensure that requests for bespoke benching are fully understood prior to sign-off of equipment layouts

Natural Light/Glare

Investigate those offices where glare and reflected light is a problem and apply anti-glare film where appropriate

Biomass Boiler Location

On future projects incorporating biomass boilers, ensure that consideration is given to housing in a separate building

Penthouse Louvre

To improve design co-ordination and timely completion of the M & E design, emphasise to the contractor the need to appoint subcontractors as soon as possible

7. Construction Issues

It should be noted that at the end of the building contract, the main contractor went into administration. It has therefore not been possible to record any comments from the main contractor in this report.

Programme

The construction period for this project was 50 weeks. There were no issues with the programme. Overall it was considered that the contractor performed well, particularly their project manager who contributed to the project being finished on the contract completion date.

Commissioning/Post Completion

There were some issues with commissioning relating to the length of period which did not allow for sufficient training on operations. There were also issues with the building and the services provided, such as water, gas and steam supplies which caused problems when the bigger equipment (autoclave, fermenters and brew line) were purchased and installed. Reported roof leaks at handover meant that some rooms could not be used and took a long time to resolve.

Outstanding Defects

It has been reported that the felt roof over the plant room is leaking. This has been reported and is currently being repaired. Problems have been experienced with the bund wall to the SAB Miller area. It has been repaired once but is showing signs of further deterioration and needs further investigation.

During recent high winds some of the external cladding panels came adrift. The reason for the cladding failure is being investigated and temporary panels have been put in place. It was noted at the workshop that the cause may be due to earlier removal of these panels due to reported roof leaks and they may not have been adequately re-fixed.

Health and Safety

There were no issues concerning health and safety – it has been reported that the contractor conducted site operations in a satisfactory manner.

Recommendations

i) Ensure that sufficient time is given to the commissioning period. Where complex or specialist services are involved a minimum period should be agreed with the relevant parties

ii) Inspect the bund wall to the SAB Miller area and repair where necessary

8. Facilities and Operations

Communication

The co-ordination of the involvement of the Maintenance Team has improved over the last few capital projects and better methods of communication are being reviewed with the Development Team. The Maintenance Teams are able to visit site early on in the construction process and this is proving helpful.

It is acknowledged that not all components/materials can be selected from a standard approved list and that design freedom is needed as part of the design and specification process.

It was noted at the workshop that the Maintenance Team did not see a copy of the snagging list. This would have been helpful in understanding what items were outstanding at practical completion stage.

It was considered that the operations and maintenance manuals were not up to the required standard on this project and that there was some confusion with the information issued for the adjacent Gateway project completed by the same contractor.

The CDM Co-ordinator for this project used standard procedures and standard templates for the production of operations and maintenance information as part of the Health and Safety File. It is the responsibility of the main contractor to engage with the CDM Co-ordinator to complete this information which it is understood did not take place on this project.

Cleaning

There were no issues with cleaning, with the users feeding back fairly positive comments on the service provided.

Security

There were no security issues raised.

Recommendations

i) Continue to improve the communication with the Maintenance Team

ii) Ensure that the Maintenance Team are directed to the defects list in the relevant project folder

iii) Ensure the main contractor engages with the CDM Co-ordinator so that operations and maintenance information is compiled in a timely manner

9. Project Management

The consultant Project Manager declined to participate in the project evaluation thus no information has been obtained from the Consultants who also did not attend the workshop or complete the satisfaction questionnaire.

10. Procurement and Cost Management

Procurement

The appointment of the consultant Project Manager and Quantity Surveyor took place early on in the project which helped the process of defining the brief and gaining an understanding of the objectives and scope of the project. There was no tendering process, the appointments being based on competitive fee rates from recent similar capital projects. Procurement issues relating to ERDF funding have now been resolved through the introduction of a new framework contract.

The Architects were appointed following the outcome of a design competition. This continues to be a worthwhile and beneficial process as it enables the client to consider a range of design initiatives and different approaches to interpretation of the brief.

The Architects and Structural Engineers were novated to the contractor at stage D+ with the Building Services Engineers being retained on the client side to provide a monitoring role and quality control service. It is considered that stage D+ or stage E is the most appropriate point in the design process at which to novate as more design certainty has been achieved by this stage.

The main contractor appointment followed standard OJEU and University procedures. The form of contract used was the JCT Design and Build contract 2005 (revised 2009). This form of contract continues to work well particularly since the contract clauses remain unamended and thus require less negotiation. In this form it is considered to provide good value in balancing cost and quality.

Cost Management

Table 1 shows the development and control of costs from inception and during the construction phase leading up to the final account.

Table 1 Cost Management

Stage	Budget	Gross Development Cost	Construction cost
Initial Concept	£7m	£7m	£5.2m
Design Stage D	£7m	£7.41m	£5.94m
Pre Tender Estimate	£7m	£7.16m	£5.88m
Following receipt of tenders	£6.5m		£4.99m
Contract Sum	£6.5m	£6.5m	£4.69m
Financial Statement 11 (March 2011)	£6.5m	£6.5m	£5.16m
Financial Statement 12 (Sept 2011)	£6.5m	£6.64m	£5.18m
Final Account (April 2012)	£6.5m	£6.71m	£5.24m

Costs were managed well on this project. Cost plans and cost checks were prepared prior to construction and once work started on site, regular cost statements were produced with the PMG kept well informed thus allowing expenditure to be monitored effectively.

The final account was issued and agreed 12 months after practical completion and showed that the project came within the agreed budget tolerance for both gross development and net construction costs even taking into account the University's instruction, following completion of the project, to undertake additional works amounting to £115,000.

12. Sustainability

The design brief for this project stipulated a BREEAM target of 'Very Good' or 'Excellent' rating. Due to problems with obtaining the necessary information via the Consultant project manager, the certification has not been completed and remains outstanding. The Estate Office has appointed an independent assessor to review the information available and concluded in a written report that the 'excellent' or 'very good' rating is not achievable. (The summary report is shown in Appendix 3).

Although the Local Authority did not apply the Merton Rule (10% of energy used to be from renewable sources), consideration was given to lowering carbon emissions through the provision of an air source heat pump and the installation of a biomass boiler unit.

Energy Consumption figures have been obtained from the University's Estate Office for the period 1 August 2012 to 31 July 2013. These are shown in the table below.

	kWh/annum	M^3	% of total kWh
Water		5,103	
Gas	467,625		37.6%
Electricity	648,315		52.2%
Biomass	126,950		10.2%
Total	**1,242,890**	**5,103**	

Energy consumption should continue to be regularly monitored and compared against the initial design assumptions and criteria.

A number of energy efficiency and sustainability initiatives have been incorporated into the building, namely:

- Air Source Heat Pump
- Biomass boiler
- Highly efficient Hoval gas condensing boilers
- Highly efficient lighting and controls
- VRF heat recovery system
- Rainwater attenuation using the adjacent lake

Recommendations

Based on the report from the independent assessor it is recommended that the BREEAM assessment should not be pursued any further

13. Summary of Recommendations	Action
Design Brief and User Consultation	
i) Ensure, where appropriate, that relevant users are involved in the development of the design brief at an early stage	Development
ii) Where possible designate a single point of contact on the user client side at the commencement of the project	Development/User
iii) Provide guidance to users on what information is required from them together with the interpretation of room data sheets	Development
Reception Area	
Ensure that the design brief on reception areas is made clear at the earliest opportunity and some flexibility built into their design	Development
Food Sciences Hall	
Investigate the problems of excessive temperatures which have been commented on by users of this area. Checks on the ventilation system and temperature sensors should be made	Operations & Facilities
Depth of Laboratory Benches	
Ensure that requests for bespoke benching are fully understood prior to sign-off of equipment layouts	Development
Natural Light/Glare	
Investigate those offices where glare and reflected light is a problem and apply anti-glare film where appropriate	Operations & Facilities
Biomass Boiler Location	
On future projects incorporating biomass boilers, ensure that consideration is given to housing in a separate building	Development
Penthouse Louvre	
To improve design co-ordination and timely completion of the M & E design, emphasis to the contractor the need to appoint subcontractors as soon as possible	Development
Construction Issues	
i) Ensure that sufficient time is given to the commissioning period. Where complex or specialist services are involved a minimum period should be agreed with the relevant parties	Development
ii) Inspect the bund wall to the SAB Miller area and repair where necessary	Operations & Facilities

Facilities and Operations

i) Continue to improve the communication with the Maintenance Team	Development Estate Office
ii) Ensure that the Maintenance Team are directed to the defects list in the relevant project folder	Development
iii) Ensure the main contractor engages with the CDM Co-ordinator so that operations and maintenance information is compiled in a timely manner	Development

Sustainability

Based on the report from the independent assessor it is recommended that the BREEAM assessment should not be pursued any further

APPENDIX 1

Sample Questionnaire

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA

QTC projects

POST OCCUPANCY EVALUATION

BUILDING USER SATISFACTION QUESTIONNAIRE (On-line survey method used)

BUILDING: BIOENERGY & BREWING SCIENCE BUILDING

Occupation (Please tick most relevant or state in 'other')
Academic staff
Admin staff
Research staff
PGR student

An evaluation of your building is being conducted to assess how well it performs for those who occupy it. This information will be used to assess areas that might need improvement and provide feedback that can be used for the benefit of similar future buildings.

Please complete the following questions relating to the above project by ticking the appropriate boxes and adding comments where requested.

1 – Satisfaction with types of space in building

Please rate the overall quality of the following areas:
(Please tick)

A: Single Office	1 V Poor	2	3	4	5 Excellent	N/A
B: Shared Office	1 V Poor	2	3	4	5 Excellent	N/A
C: PGR/Post Doc Office space	1 V Poor	2	3	4	5 Excellent	N/A
D: BEC Teaching Lab	1 V Poor	2	3	4	5 Excellent	N/A
E: ACGM Lab	1 V Poor	2	3	4	5 Excellent	N/A
F: Food Sciences Area	1 V Poor	2	3	4	5 Excellent	N/A
G: SAB Miller Brewing Area	1 V Poor	2	3	4	5 Excellent	N/A
H: Nano-brewery	1 V Poor	2	3	4	5 Excellent	N/A
I: Pilot Plant Rooms	1 V Poor	2	3	4	5 Excellent	N/A
J: Meeting Rooms	1 V Poor	2	3	4	5 Excellent	N/A
K: Toilets	1 V Poor	2	3	4	5 Excellent	N/A
L: Overall Impression	1 V Poor	2	3	4	5 Excellent	N/A

2 - Security

2.1 How safe do you feel in the building? (*Please tick)*

Unsafe Very safe

1	2	3	4	5	6	7	8	9	10

3 - Accessibility

3.1 How accessible is the building?

Not Accessible Very accessible

1	2	3	4	5	6	7	8	9	10

4 - Cleanliness

4.1 How clean is the building?

Dirty Clean

1	2	3	4	5	6	7	8	9	10

5 - Temperature

5.1 Is the temperature in winter too cold or too hot?

Too cold Too hot

1	2	3	4	5	6	7	8	9	10

5.2 Is the temperature in summer too cold or too hot?

Too cold Too hot

1	2	3	4	5	6	7	8	9	10

6 - Noise

6.1 Do you suffer distraction caused by noise in your part of the building?

Very significant Not significant

1	2	3	4	5	6	7	8	9	10

7 - Light

7.1 Is there too much or too little natural light?

Too little Too much

1	2	3	4	5	6	7	8	9	10

7.2 Is the level of artificial light too high or too low?

Too low Too high

1	2	3	4	5	6	7	8	9	10

8 - ICT/Data

8.1 How well is voice and data connectivity provided at the workspace?

Inadequate Well provided

1	2	3	4	5	6	7	8	9	10

8.2 Is the AV equipment in the teaching/lecture rooms effective?

Does not work well Works well

1	2	3	4	5	6	7	8	9	10

10 - Comments

If you have any additional comments that you would like to make about any aspect of the building and your working environment please note them here. If relevant to a particular question please give the question number.

Thank you for completing the questionnaire.
Completed forms should be returned to Tony@qtcprojects.co.uk

Appendix 2

BIOENERGY & BREWING SCIENCE BUILDING

Post Occupancy Evaluation Workshop

Held on Monday 27 January 2014

List of Attendees

User Representatives

Dr Jerry Avis	Project Manager, Biosciences

Estate Office

Mark Bonsall	Senior Engineer
Tim Brooksbank	Development Director
Steve Gilbert	Senior Building Surveyor
Andrew Brown	Building Suirveyor
Michael Kioko	Building Surveyor
Alex Glen	Space Resource Manager

Consultant Team

Alex Lipinski	Maber Architects
Steve Machin	Price & Myers – Structural Engineers
Dick Eite	Gaskells QS
Dean Williams	Gaskells QS

Apologies

John Chatterton	Edmund Shipway – Building Services Engineers

Note

Nick Bunford, Sand Project Management declined to participate in the evaluation

APPENDIX 3

BREEAM Review Summary

Anderson Green | building services consultants

The University of Nottingham **BioEnergy** building

BREEAM Review Summary

Item

1.0 BREEAM Summary

1.1 It is understood that it is a funding requirement to achieve a BREEAM 'Excellent' rating for the BioEnergy building on Sutton Bonington Campus.

1.2 A score of ≥70% is required to secure the 'Excellent' rating.

1.3 Based on the credits targeted by the **previous BREEAM Assessor**, Code Green, for the project the **targeted score** is shown to be **69.26%**, which does not achieve an Excellent rating.

1.4 It is understood that the project has been complete for over a year, and that the Main Contractor has gone into administration, therefore it is unlikely that any information can be obtained from the Main Contractor or their Sub-contractors.

1.5 It appears an Interim Design Stage Assessment has not been carried out, and as such an Interim Certificate does not seem to be provided.

1.6 It has been assumed that we are currently at the Final Post Construction Stage of the assessment.

1.7 The previous BREEAM Assessor had indicated on their Tracking Document, dated 23-08-2011, that the current achieved score stands at 53.39%.

1.8 However, Anderson Green's review of the evidence provided to date indicates that the current **Post Construction Stage** score stands at **13.05%**, which equates to the building currently failing. **NOTE: Not all evidence mentioned in Code Green's Tracker appears to have been provided to Anderson Green.**

1.9 Based on the evidence provided to date, plus further evidence that would need to be provided from Maber Architects, Price & Myers, Edmond Shipway and yourselves, it is anticipated that a score of **42.05%** (Pass rating) could still be achieved for the Post Construction Stage assessment. **However, due to the following mandatory credits not appearing achievable, the project would still fail:**

Man 1 – Commissioning: Would require all commissioning certificates and records.

Hea 12 – Microbial Contamination: Would require the mechanical contractor who installed the water systems to confirm that the water systems have been installed in accordance with the HSE's ACoP for Legionella.

Should the above mandatory credits be achieved in addition to those anticipated, a 'Pass' rating would be possible.

1.10 Please note that the above anticipated score is based on a desk top review of the evidence and assessment details provided to date. It would be beneficial to organise a meeting with the University to fully review the project and discuss any further possibilities.

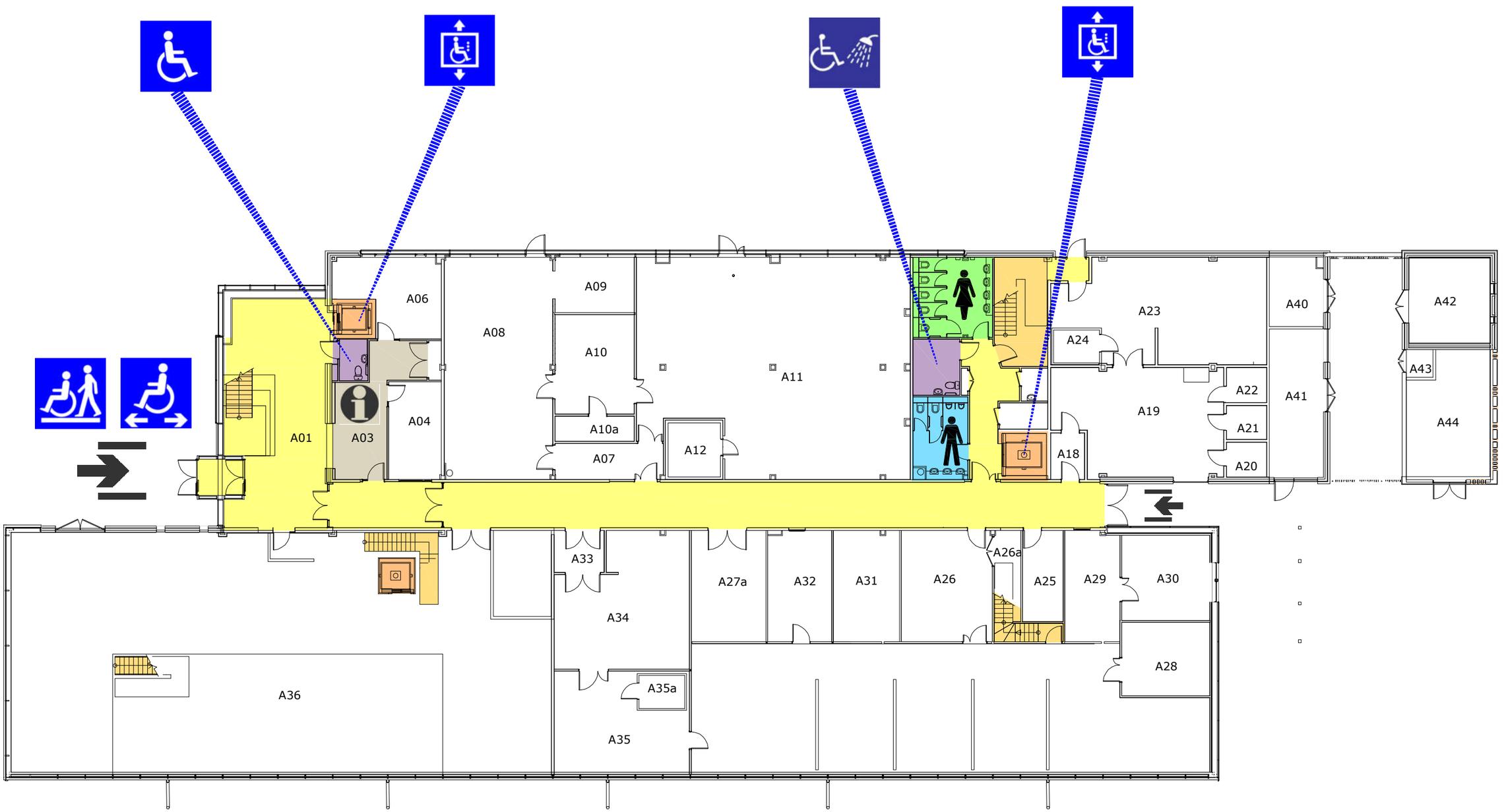
S May & E Latham 17.12.2013

APPENDIX 4

Floor Plans

Bioenergy & Brewing Science Building - A Floor Plan

The University of Nottingham



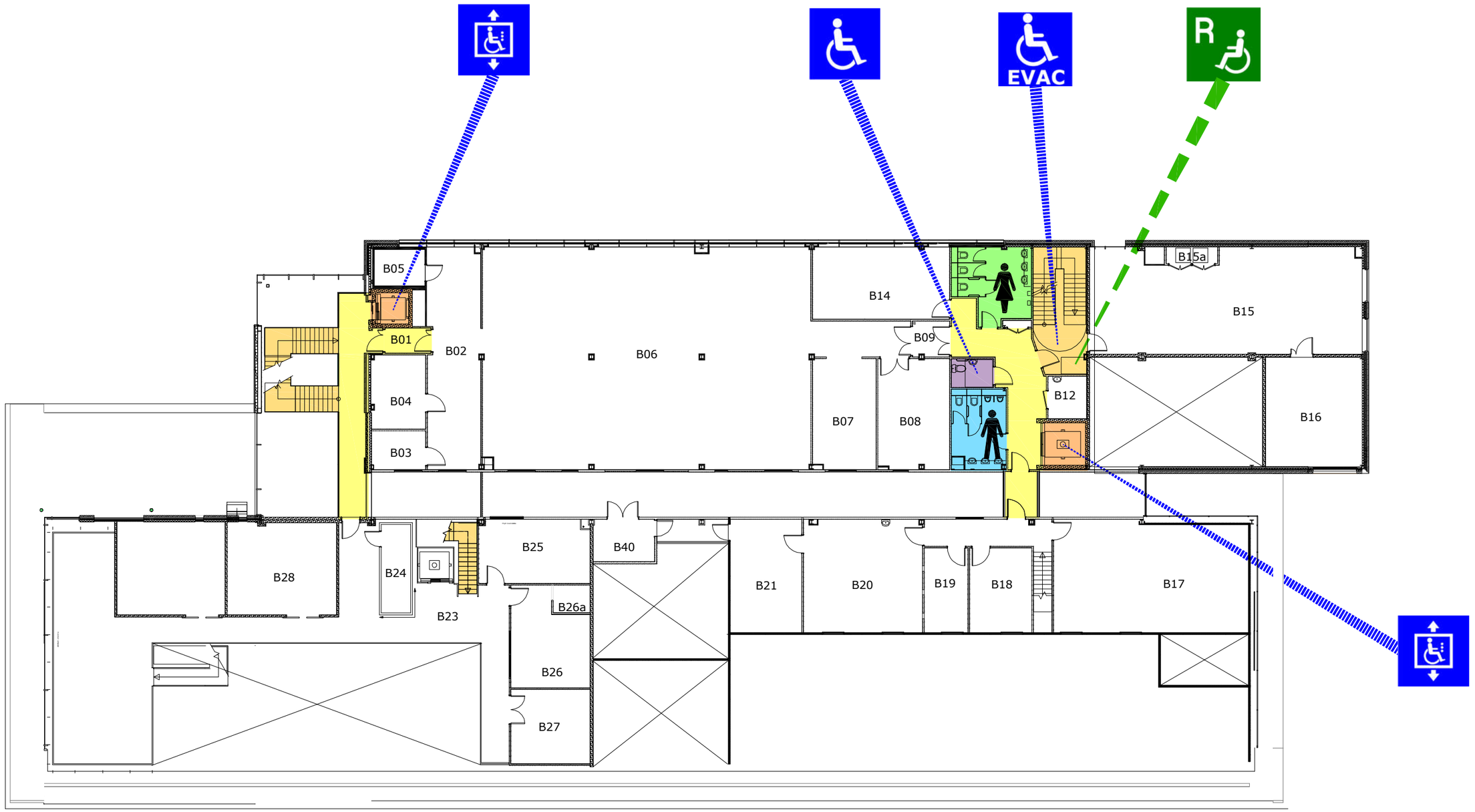
Key

- Designated Badge-Holder Parking
- Access Ramp
- Automatic Doors
- Accessible Lift
- Entrance
- Accessible Entrance
- Evacuation Chair
- Emergency Refuge
- Toilet (Female / Male)
- Accessible Toilet
- Shower
- Accessible Shower
- Stairs
- Lift
- Central Timetabled Room
- Circulation
- Reception
- Refectory/Cafe
- Fire Assembly Point

July 2011
Estate Office
www.nottingham.ac.uk/estate/

Bioenergy & Brewing Science Building - B Floor Plan

The University of Nottingham



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- Accessible Shower
- Stairs
- Lift
- Central Timetabled Room
- Circulation
- Reception
- Refectory/Cafe
- Fire Assembly Point

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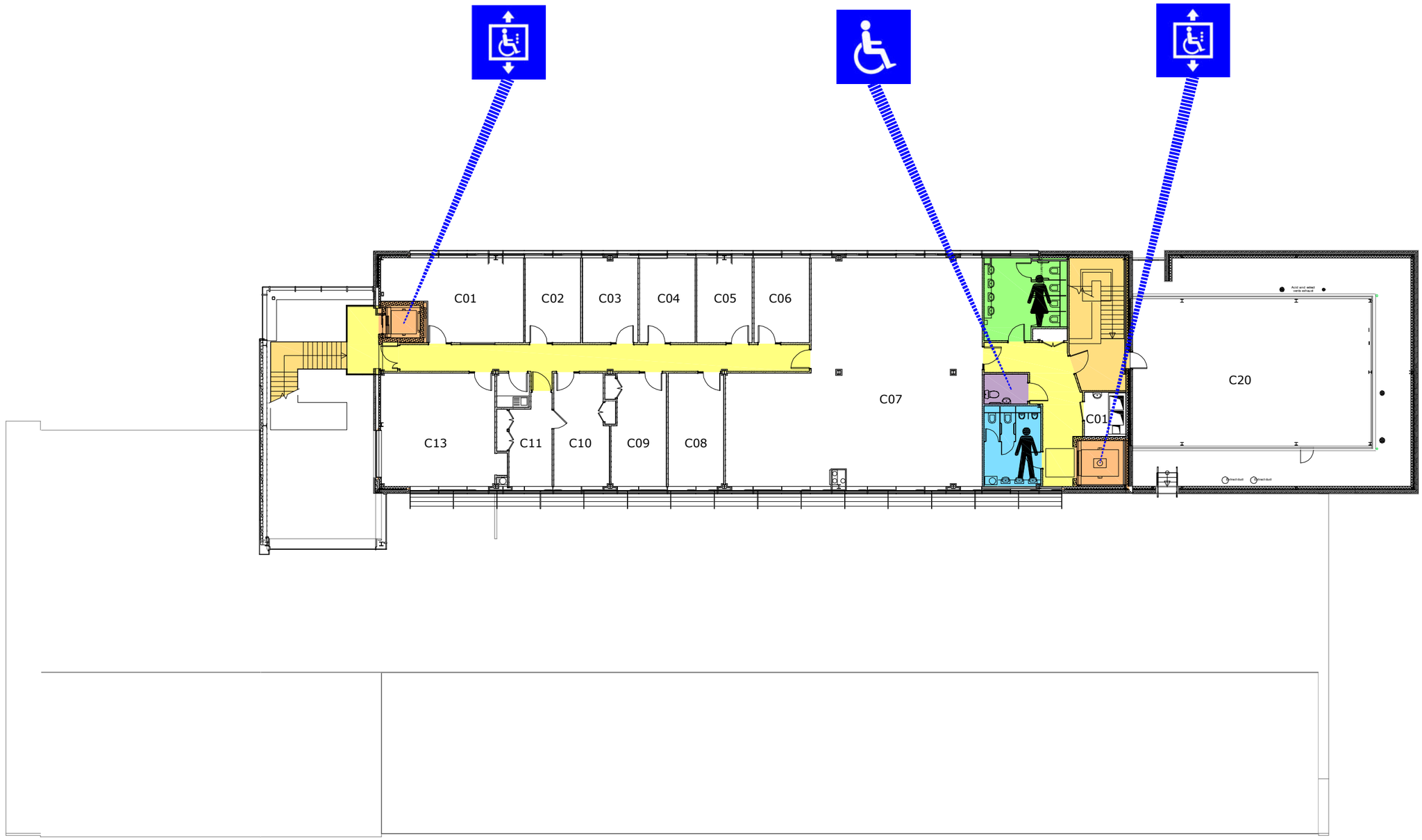
Estate Office
www.nottingham.ac.uk/estate/

Bioenergy & Brewing Science Building - C Floor Plan

The University of Nottingham



Key

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