The University of Nottingham

UNITED KINGDOM · CHINA · MALAYSIA

POST OCCUPANCY EVALUATION REPORT

GATEWAY 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/cost management is limited in this evaluation due to the main contractor going into liquidation and the decision made by the consultant project manager and quantity surveyor not to participate in the review 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 38 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
- Services Consultant
- Structural Engineer

d) Estate Office – Development

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

Interviews

Interviews were held with the following:

a) School of Biosciences
   - John Corrie, Technical Team Leader

b) Estate Office
   - Tim Brooksbank, Development Director

Workshop

A half day workshop was held on 28 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	Gateway Building
Size	3100m² (Gross Area)
No of Storeys	4 storeys
Occupants	School of Biosciences School of Veterinary Medicine & Science
Types of space	Offices (cellular and open plan) Post Grad/PhD/Post Doc office space Meeting rooms Central Timetabled teaching/seminar rooms Computer Room Staff/PG Common Room Laboratories Growth Rooms
Construction Period	50 weeks
Completion	May 2011

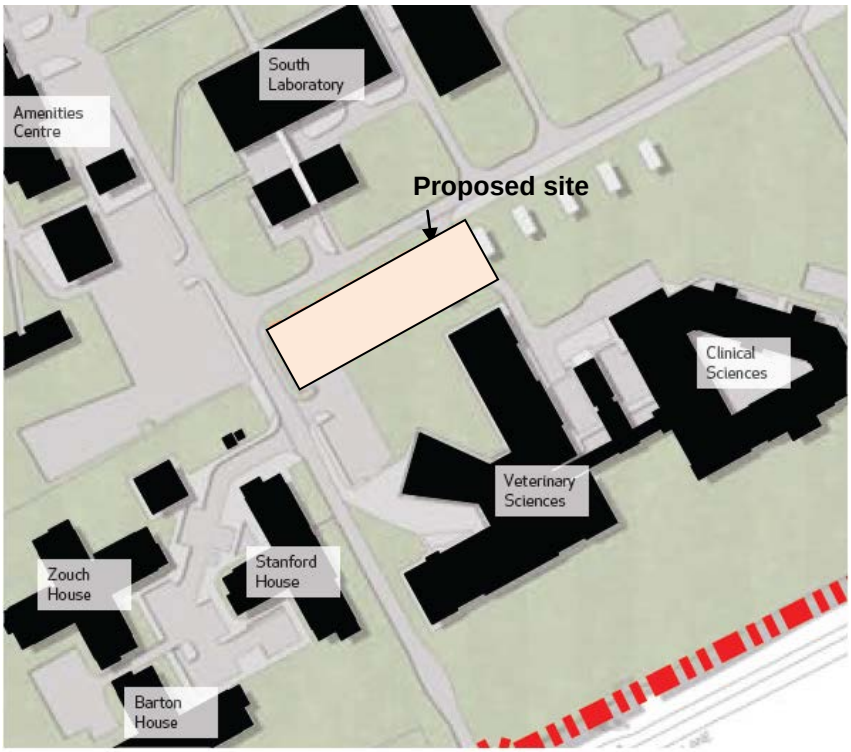
Consultant Team

Project Manager	Sand Project Management, Birmingham
Architects	Make Architects, London
Cost Managers/QS	Sand Project Management, Birmingham
Services Engineer	CPW, Nottingham
Structural Engineer	Price & Myers, Nottingham
Contractor	Baggaley Construction, Nottingham
Building Contract	JCT Design & Build 2005



4. Project Background and Description

The 3,100m² four storey building provides a further addition to the facilities for the Schools of Biosciences and Veterinary Medicine and Science at the University's Sutton Bonington campus. The development is in line with the overall Master Plan for the campus which sets out a new framework for the development of the site and aims to create an environment conducive to innovation, research and learning.



The building has been designed to accommodate a range of functions: offices, laboratories, temperature controlled growth rooms, seminar and computer rooms.

A particular feature of the building is the use of straw bales harvested from the University's farmland which form the infill to the prefabricated external wall panels. The resultant thermal insulation is impressive, achieving a low U-value of 0.135W/m² which is 60% better than that required under Part L of the Building Regulations current at the time.

The repetitive vertical elements of glazing randomly placed between the wall panels creates an interesting rhythm to the two long sides of the building while the full height glazing to the main entrance elevation forms an impressive façade frontage to the main circulation route through the campus.

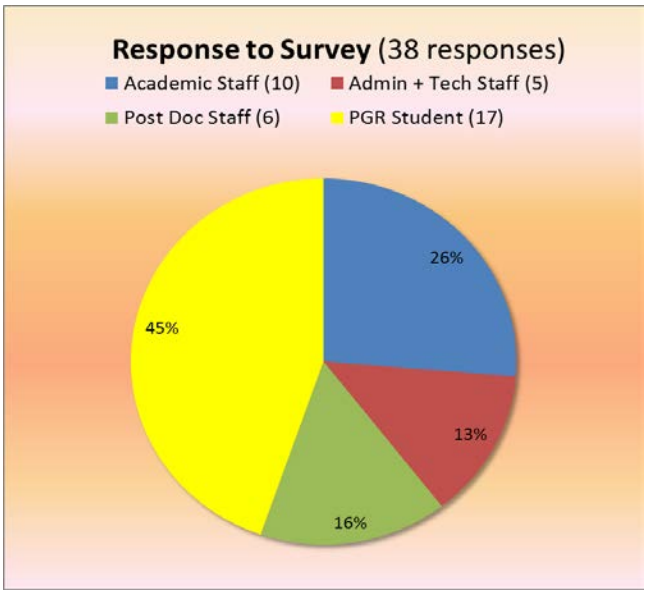
The final design was selected following a design competition issued in February 2009. The building was completed in May 2011 with the final outturn project cost within the approved budget.

The building has achieved a number of awards including the LABC East Midlands 'Best Technical Development' and The Leaf Award of 'Best Sustainable Development in keeping with its Environment and use of Technology'.

5. User Satisfaction

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

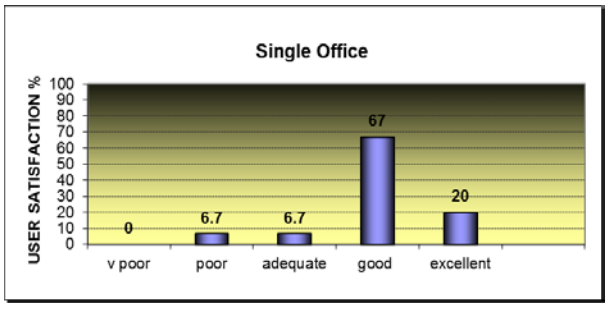
- Satisfaction with specific room types, ie shared and cellular offices, laboratories, meeting rooms, common room/social space, growth rooms, storage and overall impression of the building
- Security
- Cleanliness
- Internal room temperature
- Distraction from noise
- Lighting conditions, natural and artificial
- Data connectivity at the workspace
- AV equipment in teaching/lecture rooms

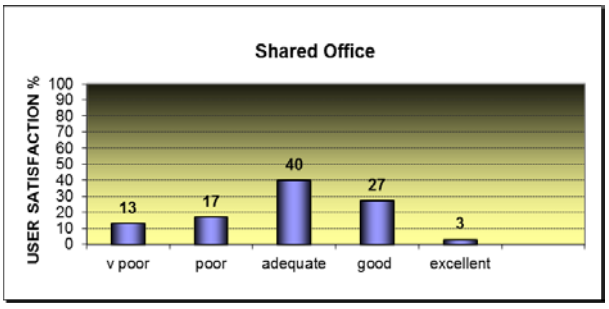


Overall, 38 responses were received from a representative group comprising Academic/Research/Post Doc/Admin staff and PGR students.

Users were asked to give a response on their overall impression of the building and this has shown a reasonable level of satisfaction. 39% of respondents rated the building 'good'.

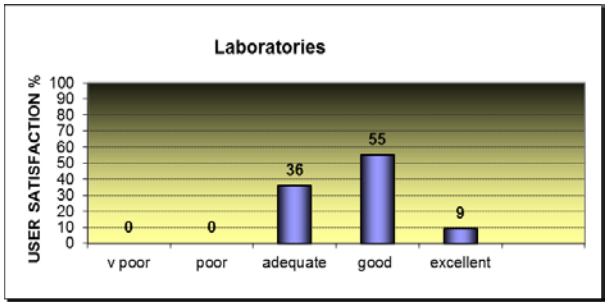
The single offices in the building comply with the University's space norms and provide good accommodation. This is reflected in the responses with those occupying the offices rating them good or excellent (87%).

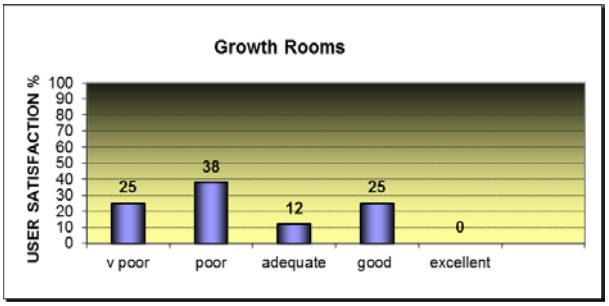




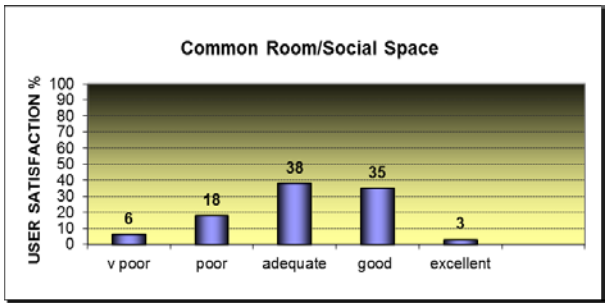
The shared offices had a range of responses with less satisfaction compared to the single offices mainly emanating from the Post Doc and PGR student areas. This is due mainly to the distraction caused by working in a shared space with offices accessed through these spaces and the fact that the PGR room (C01) is internal with no natural light.

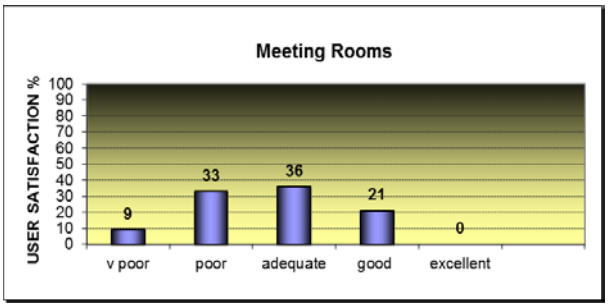
The responses received on the level of satisfaction with the laboratories were very positive with 64% rating them good or excellent. There were no negative responses to these areas.





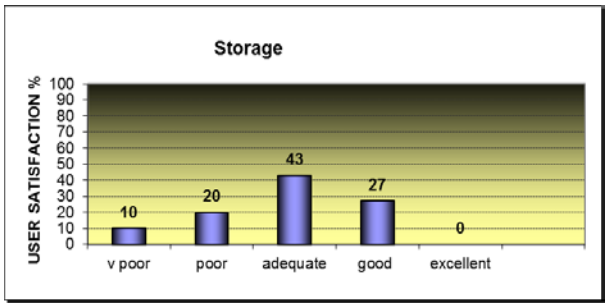
However the Growth Rooms attracted a fair degree of criticism which have had operational problems since the building was completed. Comments on the questionnaires included frequent malfunction of the climate control and no separate emergency supply back-up or independent air conditioning system. This is reflected in the satisfaction rating with 63% of respondents rating these specialist rooms as poor or very poor.





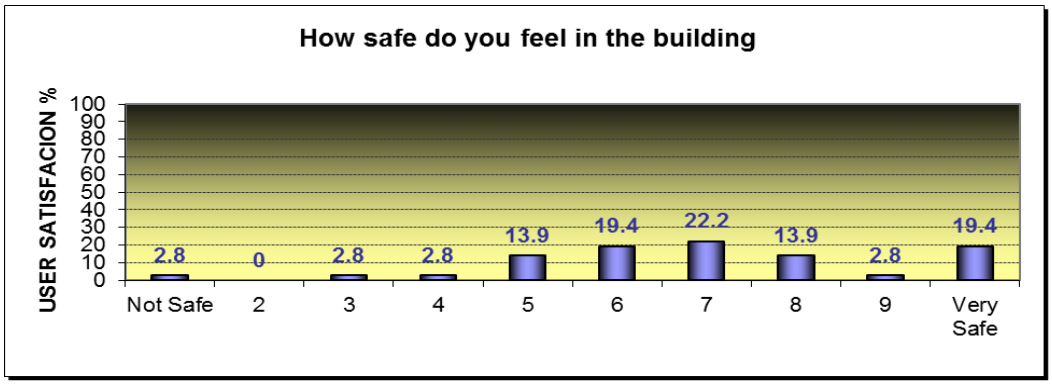
The Common Room is regarded as a good facility on the second floor and provides a useful forum for staff interaction. However there was criticism that this was the only kitchen/beverage point in the entire building which created inconvenience to those working on the lower floors.

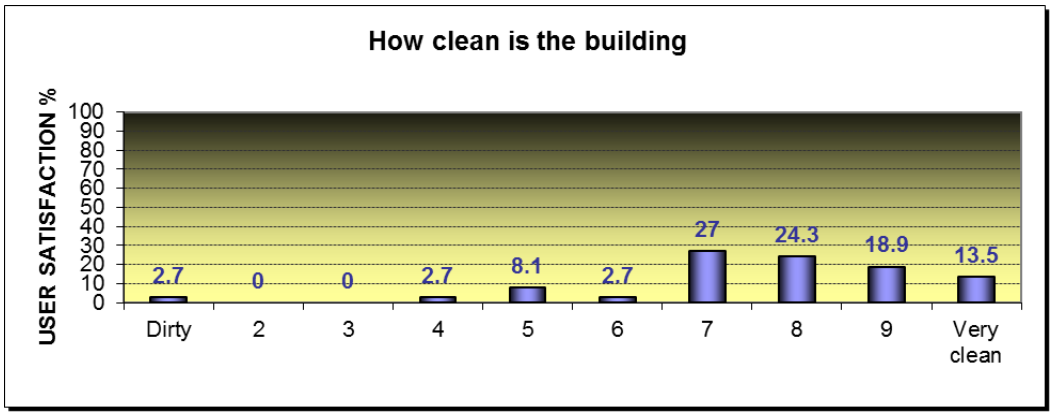
The responses on the meeting rooms reflect users' comments on the number of rooms available and that natural light is limited in some rooms. 42% of respondents felt these rooms were poor or very poor.



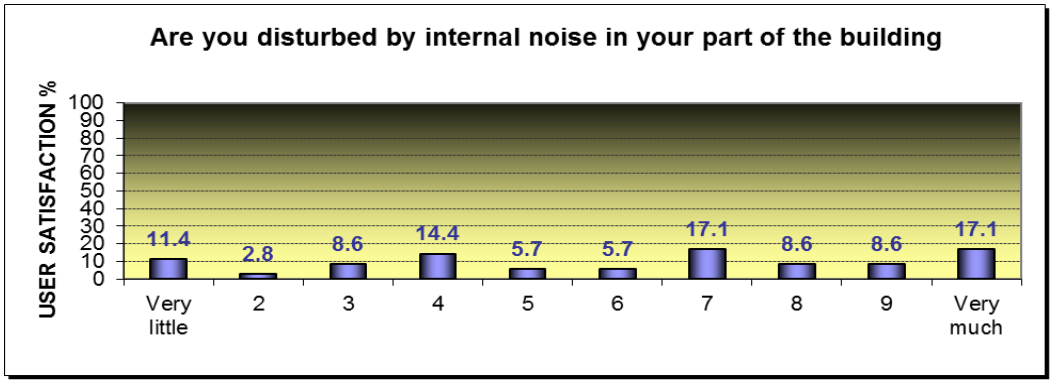
Relating to the question on storage, on the whole this was considered to be limited particularly in the PGR space where it was felt that more cupboards and shelves would have been useful.

Looking at the charts for building amenity and comfort, most respondents felt safe in the building and generally happy with the cleanliness of the building. The only negative comments related to the amount of dirt trodden in from outdoor activities.



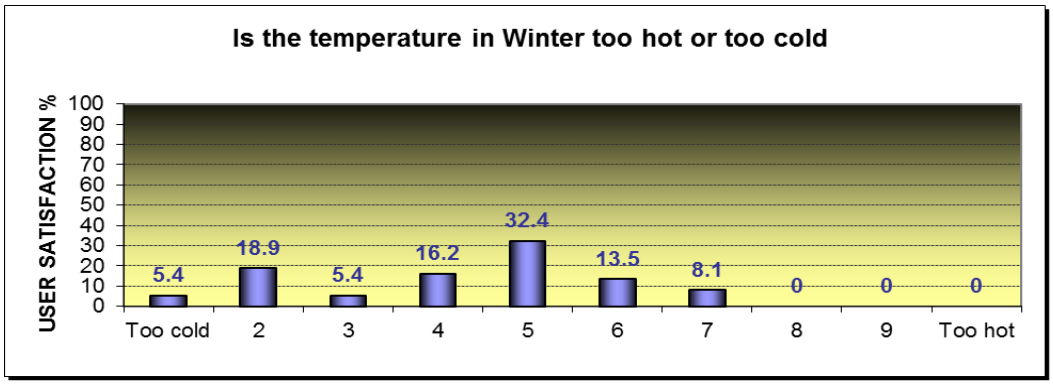


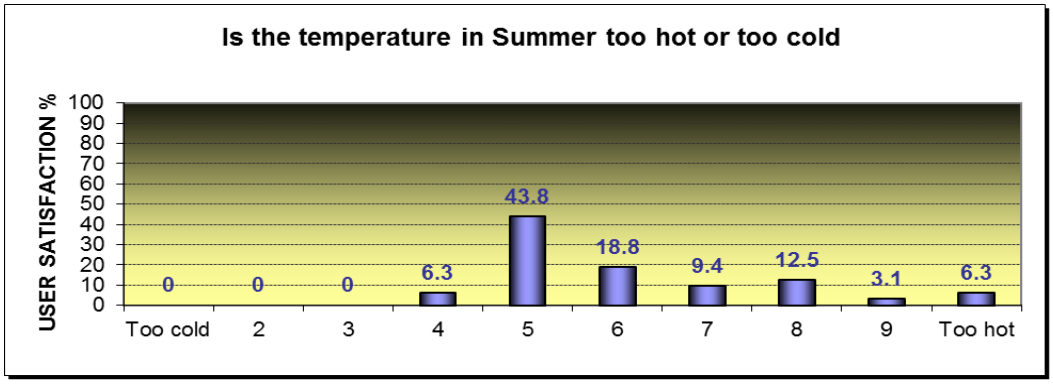
The response to the disturbance from noise question presented scores across the full range. Again scores were probably marked down due to working in open plan offices particularly the internal office.



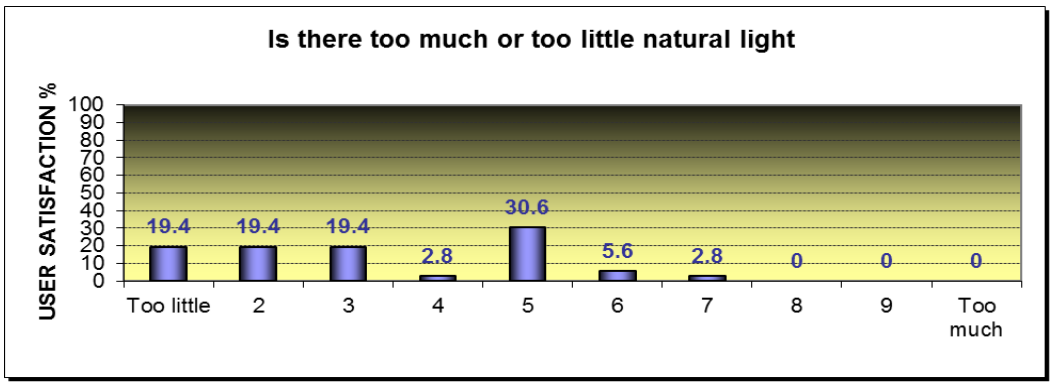
Regarding temperatures in the building, the charts show that for winter, 45% of users felt on the cold side with comments that "*the offices seem to be poorly heated, especially downstairs where it is cold in winter*".

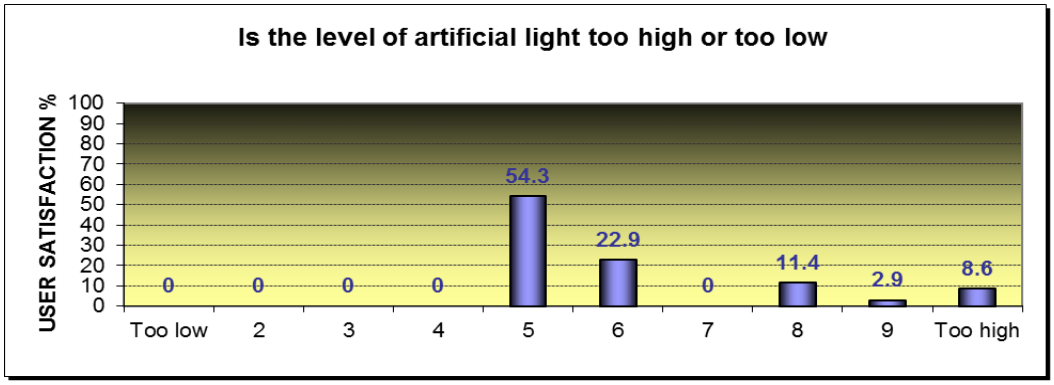
In summer nearly 50% of respondents felt the building was too hot with limited opening windows causing it to be very warm in the south facing offices. The high level of humidity has also been cited as a reason for dissatisfaction in the laboratories which rely on mechanical heating and ventilation.



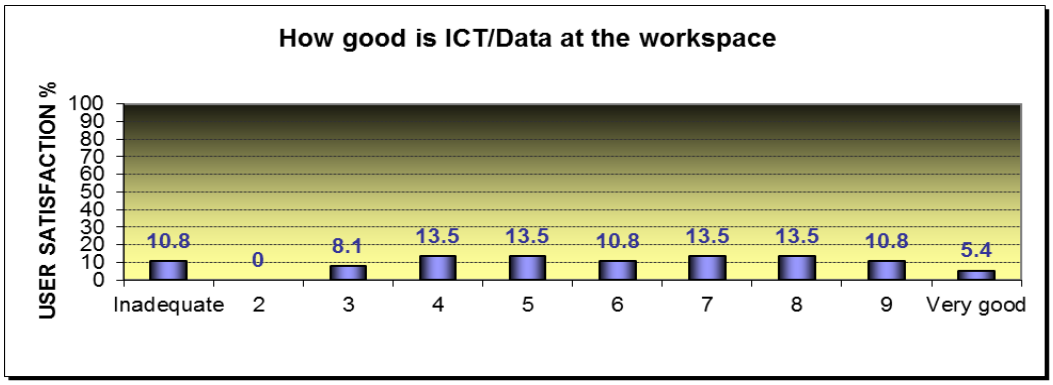


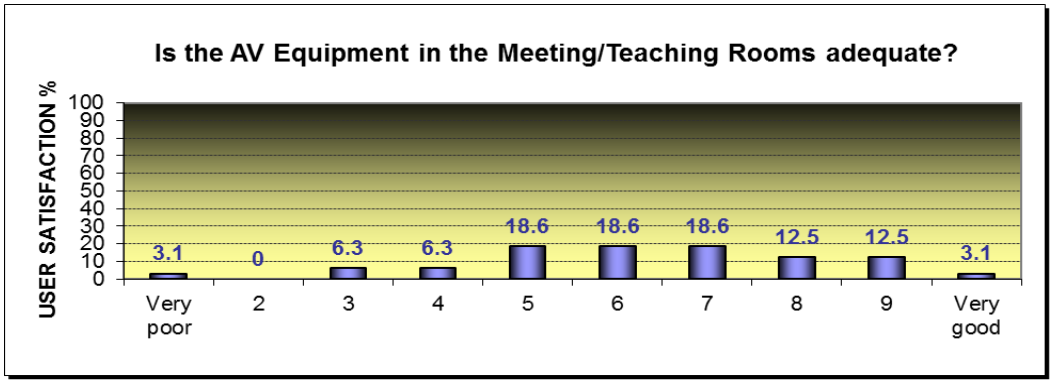
The chart for natural light shows some dissatisfaction with 58% of respondents considering there is not enough light. Again the comments are probably from occupants of the internal rooms. Regarding artificial light the responses are better with 77% of respondents rating this as about right.





The scores on how good the ICT is at the workplace were more or less across the full range. Comments related to the University network being intermittent, Wi-fi connectivity being a problem and the lack of a mobile phone signal. There were generally positive responses to the quality of the AV equipment where it was provided. (Not all meeting rooms have this facility).





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/design 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.

Generally, the consultation was thought to be satisfactory, although there were some comments at the workshop regarding the Architects' reliance on sketch plans and concept proposals presented to users. It is appropriate that the scheme at the early feasibility/design stage should be presented in sketch form as the design evolves but should progress to autocad drawing format for the later design sign-off.

Earlier user group meetings would have been helpful in order to inform the briefing process and perhaps lessen the impact or reduce subsequent design changes.

The Architects employed laboratory design consultants but they left during the design process. The contractor had said at the PQQ stage that they had laboratory experience but this proved not to be the case.

The laboratory furniture specification could have been better: there are user concerns that the units will not withstand general use over time and it is suggested that a mock-up of a typical laboratory furniture layout would have been useful in assessing fitness for purpose.

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.

Office Space

There were a number of comments from users of the open plan office space. In particular, Room C01 was singled out as an area attracting most criticism:

> *The shared office I work in often feels more like a corridor, which is very distracting.*
>
> *Our shared office in C01 is fine but we are effectively a hall for a ring of offices so it can get really noisy and there is a lot of through traffic for the offices and to the balcony*
>
> *The shared open-plan office space for postgrad students on floor C is a disgrace. I've never, anywhere, worked in such an unwelcoming and inadequate working environment.*
>
> *Having the "break out" on C floor accessible only through an office is frustrating as people are regularly walking through*
>
> *The open-plan architecture of floor C makes any sort of concentrated work utterly impossible most of the time*

Disturbance by noise and distraction are obviously issues due to foot traffic to and from the perimeter offices and access to the break out area (C07). There is also no natural light to this office area. There was originally to be a rooflight over this space but it was omitted due to the extent of plant required on the roof. Removal of partitions to the office overlooking the full height atrium would help in providing some borrowed natural light.

Kitchen/Social Space

This is a good facility located on the third floor. It is well used by occupants on this floor but less so from those on the lower floors due to its location. Small kitchens or beverage points would have been useful on the lower floors although it was pointed out at the workshop that other café areas are close by on campus and when the new Amenities Building is completed this will provide an alternative venue.

◄Kitchen/Social Space on third floor

Temperature

User comments were made regarding the temperature in some offices. Limited window opening has an impact in summer months with offices on the south side of the building getting very warm.

Some radiators don't appear to be efficient or reaching adequate temperatures. Having thermostatic radiator valves on a variable temperature circuit may be contributing to this. It is understood that the incidence of low temperatures in some offices is now being investigated.

Growth Rooms

The six specialist growth rooms are located on the third floor either side of a central corridor and there were a number of user comments expressing their concerns over their operation:

> *There are a lot of problems with the growth rooms; often failure with the light system, temperature control system, noise from fan. The fan in the growth room is running all the time and wastes energy. It cannot be reduced, it's too windy for plants, drying very quickly because of strong blow from the fan*
>
> *Growth rooms have been very problematic and frequently malfunction - likewise cold storage has experienced issues*
>
> *Growth rooms are shockingly bad, in terms of how often they break down*

The rooms do not have a separate emergency supply back-up or independent air conditioning. The problems with the functioning of the growth rooms probably stem from the selection of the specialist supplier and the cost savings applied by the main contractor.

The company selected is relatively small and may not have had the resources to carry out this installation adequately – certainly this is borne out by the poor response provided by the installer in dealing with reported faults.

On future projects where this type of installation is specified, careful vetting of potential suppliers/installers should be made to ensure they have the required resources/capabilities. Timely response to fault reports is also important.

Internal Doors

Problems have been experienced with the full height doors. These should have been designed out at the outset as they are considered too heavy and not fit for purpose. The same design intent could have been achieved with a standard door and separate over-panel with full height door frame and architraves.

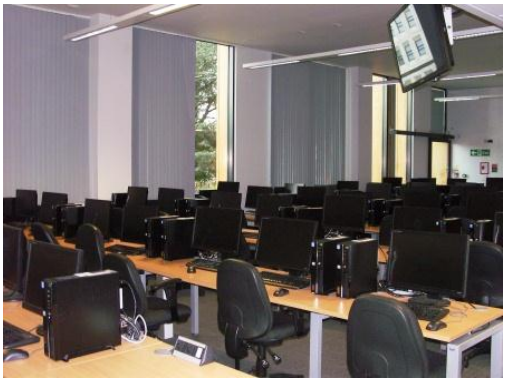
Network Connection and Wifi

Users have commented on poor network connectivity and availability of wifi. It is understood that the University is currently working on improving the network connection but wifi is still a problem.

Teaching Rooms

There are three central timetabled rooms within the building. Rooms B01/B02 can be subdivided but are generally used as one room. The utilisation rate is fairly good, exceeding the HE median and Russell Group median. However the computer room A07 has a very low utilisation rate and this needs to be investigated.

▲ Seminar Room B01



▲ Computer Room A07

Table 1 Central Timetabled Rooms

Room	Usage	Occupancy	Utilisation
A07	12.55%	68.75%	8.59%
B01/B02	96.88%	45.16%	43.75%
Overall	**54.69%**	**56.96%**	**26.17%**

Recommendations

i) *i) Architects should not rely solely on sketches to convey design proposals. Where applicable, Autocad drawings would be more appropriate in respect of later design stages*

ii) Internal offices with no natural light that allow foot traffic through a working space result in poor working conditions. In the case of room C01, this could be improved through the introduction of borrowed light from the atrium. Removal of an office to facilitate this might be an option

iii) Investigate the low temperatures in some offices

iv) On future projects where specialist installations are specified, careful vetting of potential suppliers/installers should be made to ensure they have the required resources/capabilities. Timely response to fault reports is also important.

v) An alternative to full height doors should be specified as these are considered not fit for purpose

vi) Investigate the low utilisation rate to the computer room A07

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

There were no major issues with the programme although it is considered that the contractors failing financial position may have affected the contractor's performance towards the end of the construction period.

Commissioning/Initial Occupation

There were a few issues caused by the user client moving in "post completion", in that instruments and controls had to be retrofitted. Not all the required M&E supplies were in place or correct and there were problems with leaks through windows and doors which took a while to resolve. The main problem has been with the growth rooms and their malfunction referred to earlier in this report.

Delays/Extensions of Time

There was a minor extension of time granted due to adverse weather.

Outstanding Defects

There are still some roof leaks which are being attended to.

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

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. Involvement of the Maintenance Team at the design stage could be improved by allowing the team to discuss with the Architects the design philosophy for the project.

Building Materials/Services Specification

There were no major issues concerning the specification of building materials and mechanical and electrical services. However the full height doors on C Floor are too heavy and have caused problems. This issue has been mentioned earlier in this report.

With the Building Services specification there were some initial problems with temperatures and power outage. These have now been resolved apart from low temperatures in some offices which is to be investigated.

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.

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 (from the same company) 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. They were appointed from a Consultant Framework Agreement operating at the time.

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

The consultant Quantity Surveyor 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. Information on cost management is therefore very limited. However, on a positive note, the financial outcome of this project is that it was completed within the approved budget.

11. 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 Combined Heat and Power 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		952	
Gas	727,844		45.7%
Electricity	841,698		52.8%
CHP (Elec)	24,067		1.5%
Total	**1,593,609**	**952**	

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
- CHP
- Low energy gas boiler
- Highly insulated building fabric (use of straw bales harvested from site)
- Highly efficient lighting and controls
- Localised heating units for hot water supply

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
User/Design Issues	
i) Architects should not rely solely on sketches to convey design proposals. Where applicable, Autocad drawings would be more appropriate in respect of later design stages	Development
ii) Natural lighting and the general environment in room C01 could be improved through the introduction of borrowed light from the atrium. Removal of an office to facilitate this might be an option	Estate Office/SMC
iii) Investigate the low temperatures in some offices	Operations & Facilities
iv) On future projects where specialist installations are specified, careful vetting of potential suppliers/installers should be made to ensure they have the required resources/capabilities. Timely response to fault reports is also	Development
v) An alternative to full height doors should be specified as these are considered not fit for purpose	Development
vi) Investigate the low utilisation rate to the computer room A07	Development
Sustainability	
Based on the report from the independent assessor it is recommended that the BREEAM assessment should not be pursued any further	Development

APPENDIX 1

Sample Questionnaire

POST OCCUPANCY EVALUATION

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

BUILDING: GATEWAY 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: Laboratories	1 V Poor	2	3	4	5 Excellent	N/A
D: Growth Rooms	1 V Poor	2	3	4	5 Excellent	N/A
E: Meeting Rooms	1 V Poor	2	3	4	5 Excellent	N/A
F: Common Room/ Social space	1 V Poor	2	3	4	5 Excellent	N/A
G: Storage	1 V Poor	2	3	4	5 Excellent	N/A
H: Toilets	1 V Poor	2	3	4	5 Excellent	N/A
I: 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

GATEWAY BUILDING

Post Occupancy Evaluation Workshop

Held on Tuesday 28 January 2014

List of Attendees

User Representative

John Corrie	Biosciences Technical Team Leader

Estate Office

Mark Bonsall	Senior Engineer
Tim Brooksbank	Development Director
Steve Gilbert	Senior Building Surveyor
Chris Dickinson	General Manager Maintenance
Yvonne Solomon	Building Surveyor
Paul Wright	Building Surveyor
Alex Glen	Space Resource Manager

Consultant Team

David Patterson	Make Architects
Joanna Pilsniak	Make Architects
Phil Evans	CPW – Building Services Engineers

Note

Project Manager and QS from Sand Project Management declined to participate in the evaluation

APPENDIX 3

BREEAM Review Summary

Anderson Green | building services consultants

The University of Nottingham **BioSciences** 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 Biosciences 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 **68.56%**, 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 07-10-2011, that the current achieved score stands at 44.47%.

1.8 However, Anderson Green's review of the evidence provided to date indicates that the current **Post Construction Stage** score stands at **5.03%**, 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 Make Architects, Price & Myers, CPW and yourselves, it is anticipated that a score of **36.68%** (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.

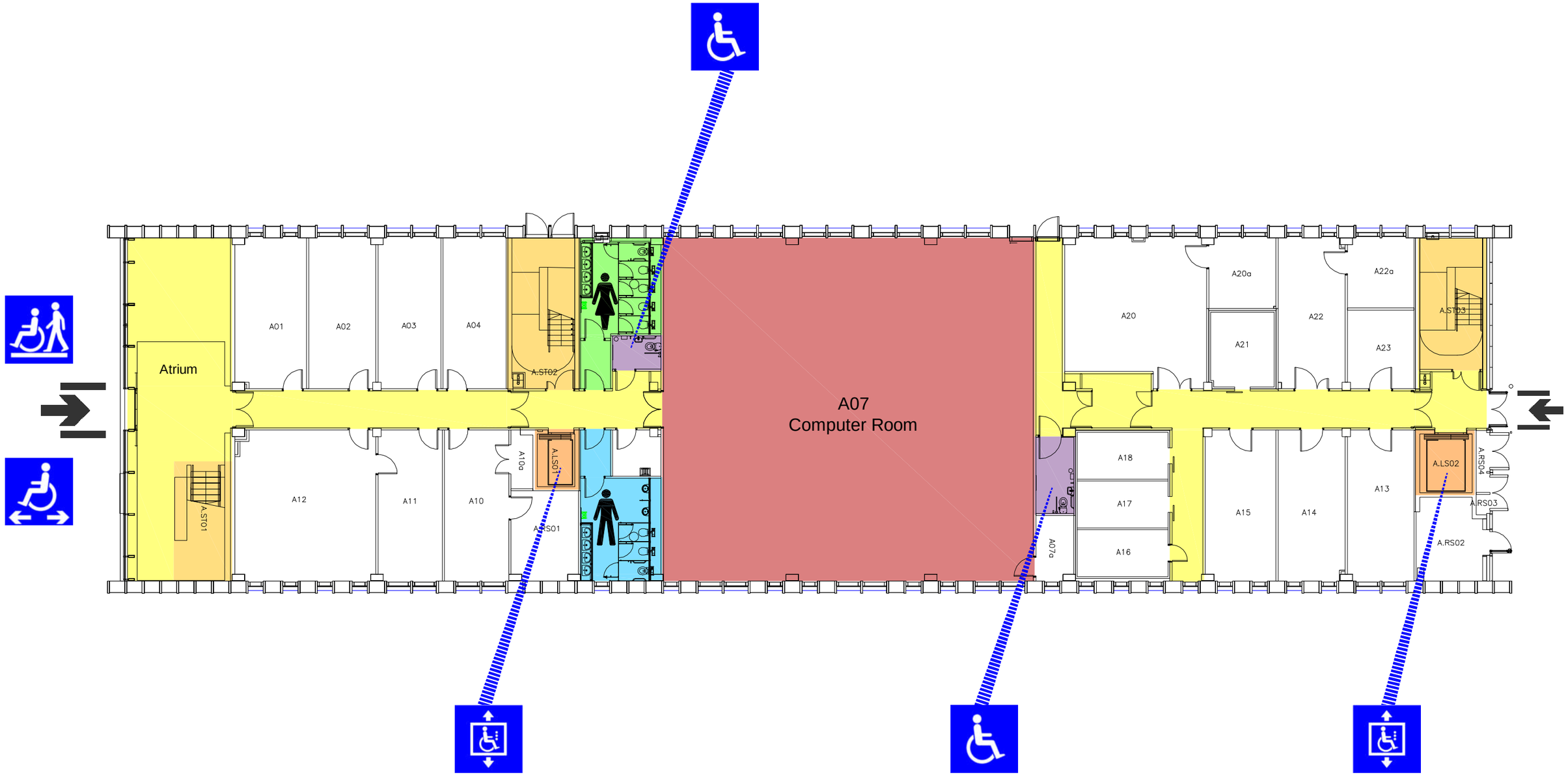
S May & E Latham 17.12.2013

APPENDIX 4

Floor Plans

Gateway Building - A Floor Plan

The University of Nottingham



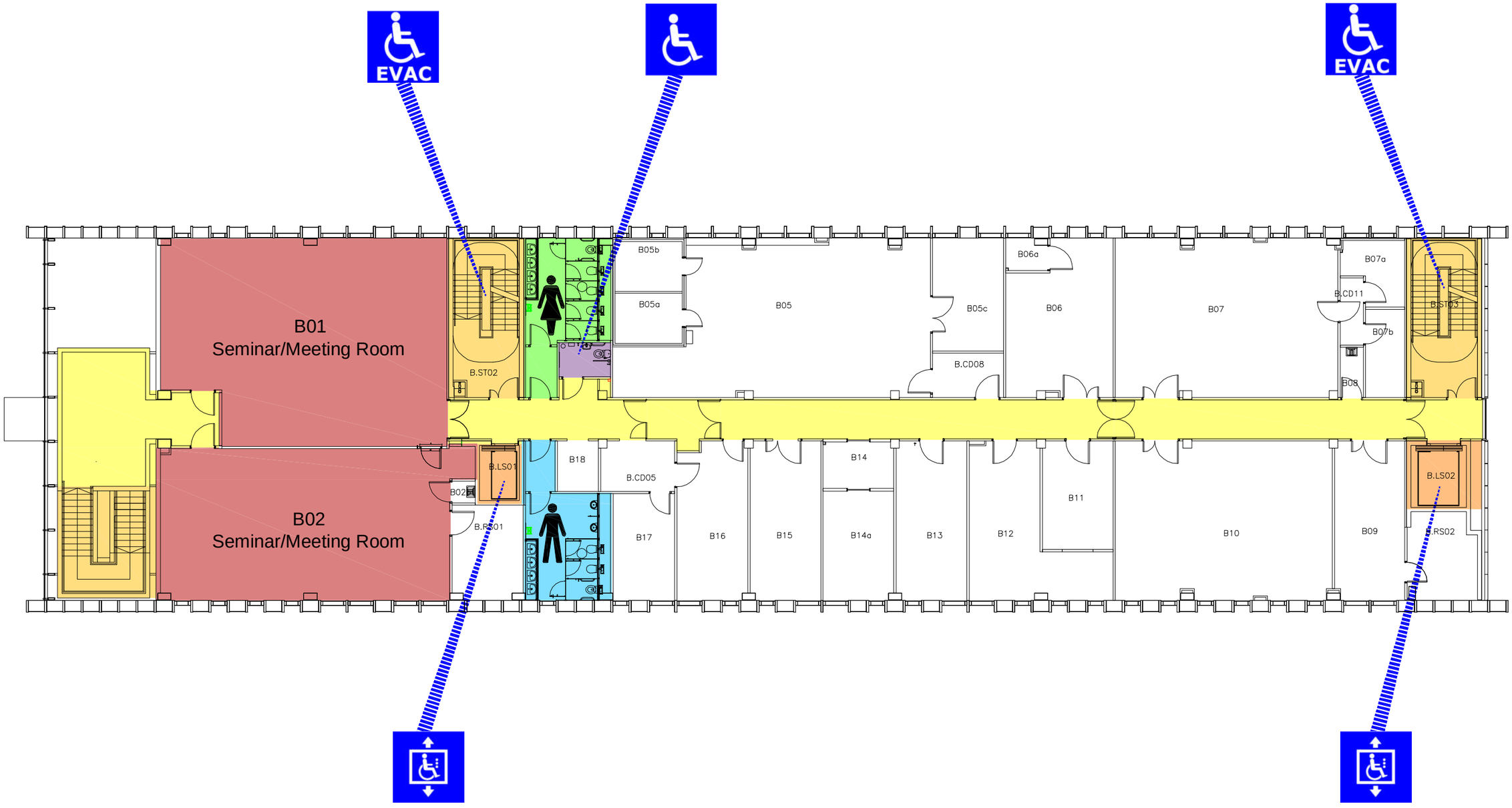
Key

- 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/

Gateway Building - B Floor Plan

The University of Nottingham



Key

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- Accessible Entrance
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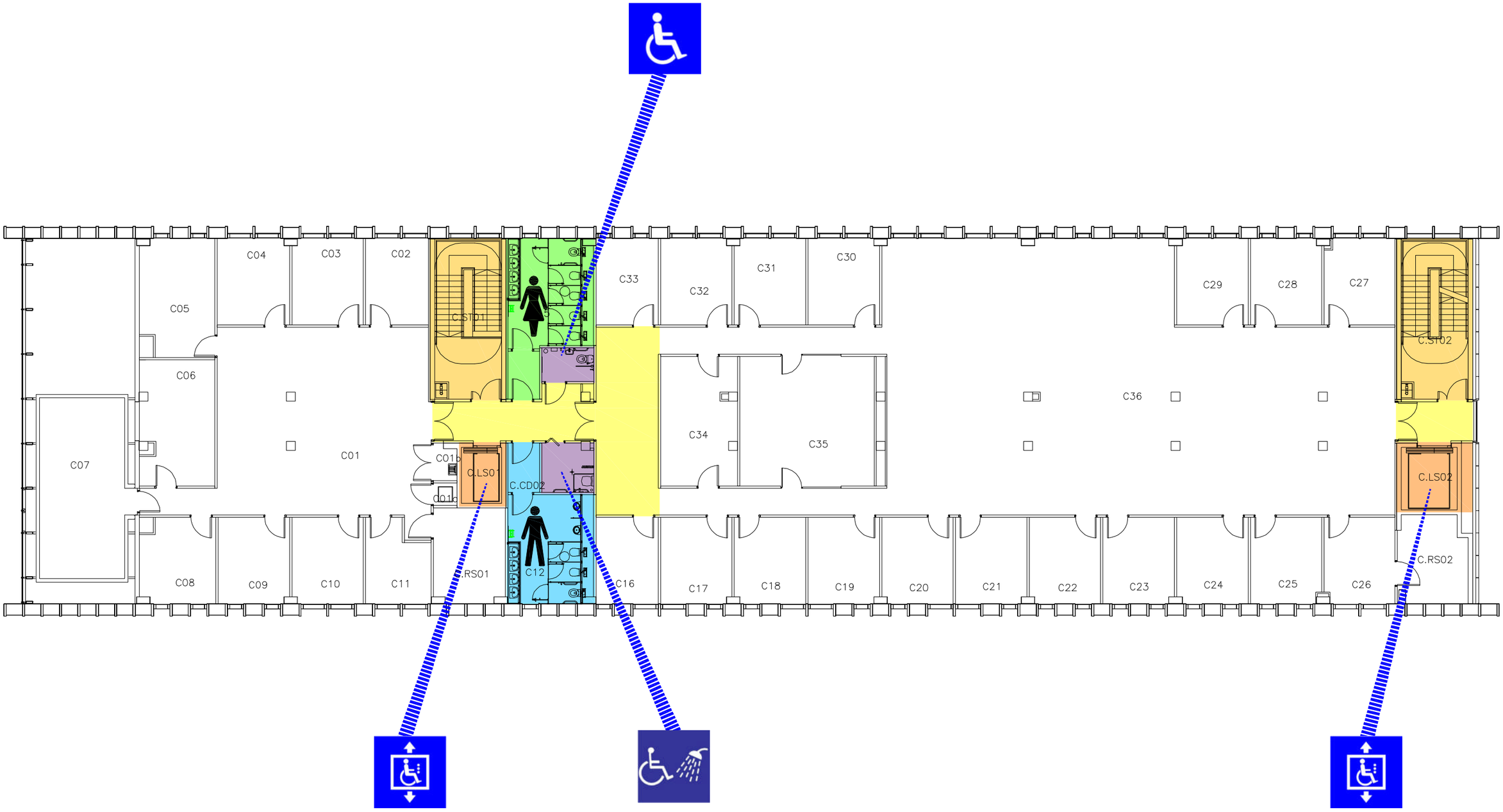
- Emergency Refuge
- Toilet (Female / Male)
- Accessible Toilet
- Shower
- Accessible Shower
- Stairs
- Lift
- Central Timetabled Room
- Circulation
- Reception
- Refectory/Cafe
- Fire Assembly Point

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

Gateway Building - C Floor Plan

The University of Nottingham



Key

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- Accessible Toilet
- Shower
- Accessible Shower
- Stairs
- Lift
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- Circulation
- Reception
- Refectory/Cafe
- Fire Assembly Point

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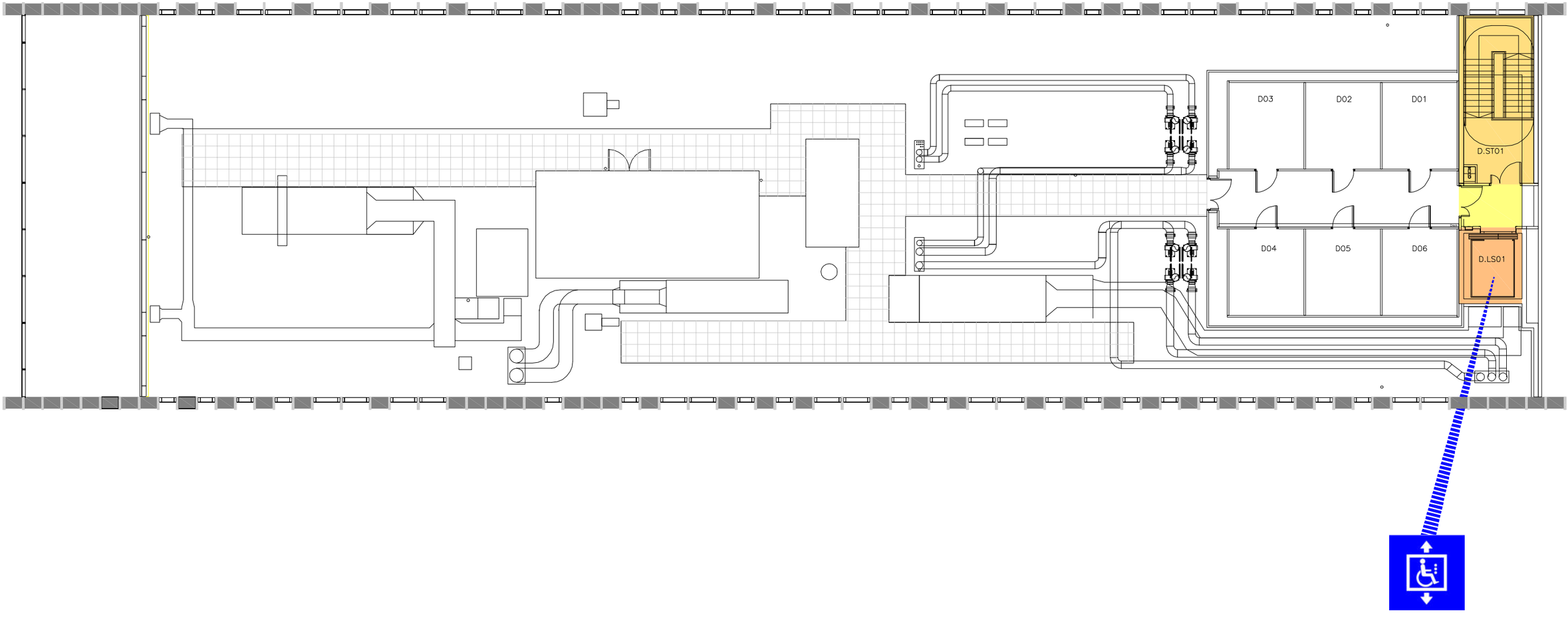
Gateway Building - D Floor Plan

The University of Nottingham



Key

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