Education space and digital assessment

Purpose of this Paper

This paper supports the Digital Assessment Programme: Business Case – March 2025.

It is acknowledged that the expansion of digital assessment is potentially constrained by availability of suitable spaces and the readiness of those spaces to deliver digital examinations. Initial modelling of the estate suggests a shortfall of 1,000 seats.

To address this shortfall, an initial feasibility study has been conducted, focussing on:

a. **The current estate**, identifying additional locations and ensuring their digital readiness.

b. **A larger estate,** exploring the potential use of more of CUPA, Colleges and external venues.

This feasibility study is preliminary in nature and highlights the need for further investigation into the complexities, feasibility, benefits and costs of the necessary works.

This paper asks PRC to:

a. **Acknowledge** the issues related to space.

b. **Recognise** the constraints and their impact on digital assessment.

c. **Note** the options available, ranging from improving current estate spaces to expanding provisions to meet all demand.

d. **Endorse** a detailed feasibility study to guide a business case for investing in education spaces, including those to accommodate digital examinations.

Background

For further details on education space and examinations, refer to the 'Education Space and Examinations' discussed at the Programme Board for Education Space (PBES) (January 2024) and the General Board's Education Committee (January 2024).

In February 2025, PBES received a visionary paper to meet wider question of exam space insufficiency, the lack of dedicated examination space within the University and the critical risks presented by the lack of available space, which could be provided by CUPA. (Paper PBES70_02 I Have a Dream.)

PBES commissioned work on a Digital Exam Capacity Model and in February 2025 it received the emerging findings which were *to develop a large-scale venue with 1000 or more seats capacity to position for developing future needs and to consider which existing venues could support digital delivery to ensure optimum capacity.*

Key Messages

1. **Space Constraints**: The estate has limited space to support all assessment modes and students requiring examination adjustments. Many students with adjustments are accommodated in their respective Colleges, placing financial and operational burdens on the Colleges.
2. **Venue Usage**: Examinations are primarily held in teaching venues. While this poses fewer issues during the reduced teaching schedule of Easter Term, clashes occur, especially at other times of the year.

3. **Limited Alternative Venues:** The estate has a restricted number of additional locations suitable for examinations, especially digital ones. A recent search identified only 12 additional locations.
4. **Digital Readiness:** Across the estate, only 28 locations are equipped with reliable Wi-Fi and adequate power, meeting the requirements for digital exams.
5. **Investment Needs:** Upgrading the estate to accommodate the growing demand for digital examinations will require investment. For instance, enhancing Wi-Fi capabilities in just 12 additional locations will cost upwards of £200,000.
6. **Power Solutions:** Temporary power packs can mitigate the lack of power provision and avoid works to the estate (some of which will be constrained by the listed status of many of our buildings). An enquiry by the Clinical School in Michaelmas Term 2024 identified that a charging bank trolley and a personal battery bank for 240 users would cost just over £150,000. (See: discover ANIMATE battery power | OE Electrics.)
7. **External Space Challenges:** Using external or College spaces necessitates specific infrastructure, which might be hard to secure or require further investment. Additionally, these venues could face complications due to being outside the UIS-managed University Data Network.
8. **Funds:** In February 2025, PBES was advised (Paper PBES70_06 Update on PRC Investment Project) that £1m of the £5m funding had not yet been allocated.

Paper

The rest of this paper presents the findings from the initial feasibility study.

Space and Infrastructure Requirements

Examination venues for digital examinations require the following attributes.

a. **Wi-Fi**. Adequate bandwidth is required to support the simultaneous use of multiple devices during exams. This is best achieved through the 10Gbps connection to the UDN (University Data Network). Ideally, two connections are required (for load sharing and resilience). PoP switch | IT Help and Support.

   The 10Gbps connection to the UDN is usually building specific and not room specific. 10Gbps is not common across education space.

   Where the 10Gbps, connection does not exist or is not at 10Gbps, work is required: including an installation cost and increased annual cost for the Institution.

   The costs are outlined here: https://help.uis.cam.ac.uk/service/network-services/datanetwork/pop-switch#prices. (The current annual cost will be as per the first 1G row, and the installation and new annual cost will be as per one of the 10G rows - the exact one will depend on the connectivity requirements in that location).

   If digital examinations were to be held in **Colleges**, then two 10Gbps connections are required (one for load sharing and one for resilience) into the entire College site. This will incur an installation cost and increased annual costs for the College where such connections are not already in place. Colleges would also need to ensure that their internal network and Wi-Fi provision met the required standards, if not provided by UIS.

b. **Power sockets**. Most digital assessments require students to bring their own devices (BYOD). The pilot has determined that additional devices are required for emergencies.

Students are trained to have their devices charged, negating the need for individual power sockets. However, the pilot has revealed that, for emergencies, each venue should provide a power socket for about 10% of the candidates as a minimum. Due to the age of the estate and the listed nature of many of the buildings, power sockets are not always available, thus currently limiting the availability of space for digital examinations.

Power packs are an alternative to power sockets, but these would need to be hired/purchased increasing the operational cost.

c. **Larger flat floor venues.** Digital examinations are best accommodated in large flat floor venues.

   Tiered space is unsuitable because of (i) visibility of screens and (ii) need for access if candidate has technical or other exam-related issues.

   Splitting exams across multiple venues increases logistical complexities associated with exam setup and invigilation and increases costs.

   The capacity must exceed the number of candidates to accommodate additional desks near the sockets, which are left empty so that students can move there if their power fails.

d. **Secure storage space** for hardware. Examination venues already require a secure storage area. In addition, an additional area is required to store and charge hired laptops and any associated paraphernalia.

   This is not only a requirement of the space but might also attract costs if a secure unit is required. This cost would be met from the Examiner and Supervisor Fees Administered Fund[1].

e. **Larger desks**. Traditional exams have typically used 60 x 60 desks, but digital examinations require more work surface. These will need to be purchased where digital examinations are held in non-education spaces, or where such furniture does not exist. This cost would be met from the Examiner and Supervisor Fees Administered Fund.

   Such additional furniture would be stored in one of the examination storage facilities (Lord's Bridge).

AVAILABILITY OF SPACE

The pilot of digital assessment was purposefully contained to those spaces that were believed to be digitally ready (as described above). The pilot showed that the inadequacies of some spaces, which resulted in some examinations relocating from traditional examination venues to laboratory spaces. This is a positive shift when not being used for teaching.

Currently **28** physical locations can accommodate digital assessment (see Appendix A).

The challenge has been to identify additional space to expand the numbers adopting digital assessment, which is digitally ready or could be made ready and does not reduce the overall availability of examination space (as digital examinations occur at the same time as other modes of assessment, which also need to be accommodated).

To meet this challenge, the following actions were undertaken.

[1] The Administered Fund is currently under scrutiny, and a 5% saving is being sought. Therefore, additional costs will not achieve any savings.

a. **Search of MICAD**. In 2024-25 MICAD[2] was interrogated to reveal any additional spaces. This revealed some spaces not familiar to the Exams Team who subsequently assessed against the design criteria for examination space. Following this assessment, a further possible **12** locations were identified (see Appendix B).

b. **Digital Exam Capacity Model.** Working with EventMap (the data specialists engaged by Reshaping the Estate) a final report is due that will reveal the capacity in the estate to accommodate digital examinations. This model has absorbed the additional 12 venues identified.

   PBES received the emerging findings, based on the best-case scenario, in February 2025 – that being '*the University is short of space recommended that the University of Cambridge consider the identification and development of a large-scale venue with 1000 or more seats capacity to position for developing future needs. Additionally, consideration may be provided to which existing venues could support digital delivery to ensure optimum capacity*'.

c. **Assessment of additional venues.** Estates and UIS have undertaken some preliminary assessment of the **12** venues to determine if digitally ready and if not, what work might be required, and at what potential cost, to make digitally ready. All require some investment. The detail is in Appendix C.

d. **Assessment of existing venues**.

   The Exams Team have undertaken some discrete modelling to determine if digital examinations could be accommodated into existing spaces including those:

   i. currently used digital assessment but have not been used for cohorts outside of that department (or School).

   ii. used for other modes of assessment.

   iii. used to accommodate students with examination adjustments where those spaces are digitally ready or could be with some investment.

   This has revealed that a small number of digital examinations could be accommodated in such spaces, but the shortfall remains. The Exams Team also need to ensure that there is sufficient alternative space for other modes of assessment and students with examination adjustments.

e. **Assessment of CUPA space**. In January 2025, Estates arranged a visit to CUPA to assess potential space (some of which is available through an existing MoU, and some would be subject to an additional MoU). This revealed exciting potential that was presented to PBES as a concept in a paper entitled 'I Have a Dream'. If deemed appropriate, the concept would need to be turned into a business case.

Produced by: Catherine Fage, Programme Lead, Education Space Programme (Reshaping our Estate) in collaboration with members of a task and finish group to support the contract negotiations and planning for digital assessments. Those members being: Adam Dearsley, Gayle Harris, Richard Hey, Samuel Rodrigues, Jo Wilson, Georgina Wong. The group also received input from the Exams Team, Education Services.

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[2] As a result of work commissioned by the Programme Board for Education Space (PBES), MICAD now identifies those spaces suitable as education space.

Appendix A: List of Current Locations for Digital Examinations

Description	***Capacity***	***Mode of assessment (digital, written or both)***	***Type of seating***	***Issues with space***
2nd Floor CUPA building	*126*	*Both*	*Flat*	*Newly acquired. To be used in 2025-26*
Biffen Lecture Theatre, Department of Genetics, Downing Site	*30*	*Both*	*Tiered seating*	*Lack of toilets.*
Bioinformatics Training Room, Craik Marshall Building, Downing Site	*28*	*Digital*	*Flat*	
Clinical School, Hills Road	*150*	*Both*	*Mixed*	*Only used by that dept.*
Cockcroft Lecture Theatre, New Museums Site	*48*	*Both*	*Tiered seating*	
Colman Library, Dept. of Biochemistry, Hopkins Building	*18*	*Digital*	*Flat*	*Closes library down during exams*
Cormack Room, University Centre	*64*	*Both*	*Flat*	*Currently used for students with exam adjustments*
Department of Pathology	*92*	*Digital*	*Lab space*	
Department of Veterinary Medicine, Madingley Road	*100*	*Both*	*Tiered*	*Only used by that dept.*
Department of Zoology	*218*	*Digital*	*Lab space*	
Dept of Biochemistry Lab, Hopkins Building	*72*	*Digital*	*Lab space*	
Exam Hall, Student Services Centre, New Museums Site	*162*	*Both*	*Flat*	
Experimental Lab, Physiology Building	*48*	*Digital*	*Lab space*	
Faculty of English, 9 West Road	*52*	*Both*	*Flat*	
Hicks Room, University Centre	*64*	*Both*	*Flat*	*Currently used for students with exam adjustments*
Histology, Dept of Phys, Development and Neuro	*55*	*Digital*	*Lab space*	
Jean Thomas LT, Dept of Biochemistry, Sanger Building	*30*	*Digital*	*Tiered*	
Large Practical Room, Dept. of Pharmacology	*45*	*Digital*	*Lab space*	
Main Dining Hall, University Centre, Granta Place	*90*	*Both*	*Flat*	*Currently used for students with exam adjustments. Requires carpet to be laid*

Description	Capacity	Mode of assessment (digital, written or both)	Type of seating	Issues with space
Meade Room, University Centre	*30*	*Both*	*Flat*	*Currently used for students with exam adjustments*
Perham Room, Dept of Biochemistry	*20*	*Digital*	*Flat*	
Phoenix teaching rooms	*42*	*Digital*	*Flat*	*Currently used for students with exam adjustments*
Sidgwick Avenue Lecture-rooms	*320*	*Both*	*Mixed*	*Currently used for students with exam adjustments*
Sidgwick Avenue Lecture-rooms (top floor)	*40*	*Both*	*Flat*	*Currently used for students with exam adjustments*
Teaching Classroom, Department of Psychology	*30*	*Digital*	*Flat*	*First time in 2025.*
Teaching Lab, Department of Plant Sciences	*36*	*Digital*	*Lab space*	
Titan Teaching Rooms, 2nd Floor, Cockcroft Bldng, New Museums Site	*75*	*Digital*	*Flat*	
West Hub (SFH), JJ Thomson Av, West Cambridge	*105*	*Both*	*Flat*	

Appendix B: The Additional Twelve Locations that might Accommodate Digital Examinations

Description	Capacity	Currently in use by exams	Mode of assessment (digital, written or both)	Type of seating	If not currently used, why not	Issues with space
2nd Floor CUPA building	126	N - due on stream in 2026	Both	Flat	Not yet available.	
Babbage Lecture Theatre, New Museums Site	73	Y	Written	Tiered seating		
Cambridge Institute of Criminology	40	Y	Written	Flat		Not in use 2025 due to roof works
Department of Chemical Engineering and Biotechnology, Philippa Fawcett Drive	78	Y	Written	Mixed		Only used by that dept.
Department of Materials Science and Metallurgy, 27 Charles Babbage Rd	60	Y	Written	Tiered		Only used by that dept.
Divinity School, Faculty of Divinity, West Road	60	Y	Written	Flat		
Faculty of Law	224	Y	Written	Tiered		
Lady Mitchell Hall	130	Y	Written	Tiered		
Little Hall, Sidgwick Avenue	60	Y	Written	Tiered		
Mary Allan Building, Hills Road	63	Y	Written	Flat		
Norwich Auditorium, Roger Needham Building	48	N	Both	Flat	Not yet been released for exams.	
William Gates Building, JJ Thomson Avenue	140	Y	Written	Mixed		Only used by that dept.

Appendix C: Readiness of the additional 12 locations and indicative cost estimates[3]

The table below lists the additional 12 locations in readiness order. All venues require some investment to accommodate digital assessments.

		Power Confirmation		Wi-Fi Confirmation									
Space Description	**Capacity**	**Power Ready?**	**Notes**	**Switching Equipment**	**Wi-Fi Equipment**	**Contractor**	**Change in Annual Cost:** (New Minus Old due to Upgrading Wi-Fi to 10G: A Must for Reliable Exam WiFi)	**Additional Installation Cost** (to get wifi to exam reliable means upgrading to 10G, a one off cost)	**Total Cost**	**Issues**	**Notes**	**Wi-Fi Ready** (Upon Survey Completion and Work Execution as per Estimated Costs)?	**Both Power Ready and Wi-Fi Ready*?**((Upon Survey Completion and Work Execution as per Estimated Costs)
William Gates Building, JJ Thomson Avenue	140	Yes, just meets requirements	No notes.	£10,000	£2,500	£5,000	£0	£0	£17,500	N/A	N/A	Yes - with survey completion and work execution as per estimated costs	Yes - with survey completion and work execution as per estimated costs
Department of Chemical Engineering and Biotechnology, Philippa Fawcett Drive	78	Yes, LT 1&2 112 seat, 34 ps, LT3 70 seats, 24 ps	No notes.	£0	£2,000	£1,500	£0	£0	£3,500	N/A	Need clarity on location assumptions made	Yes - with survey completion and work execution as per estimated costs	Yes - with survey completion and work execution as per estimated costs
2nd Floor CUPA building	126	Yes - perimeter trunking should ensure sufficient capacity	Perimeter trunking of space should ensure sufficient capacity	£10,000	£4,000	£7,000	£0	£0	£21,000	N/A	N/A	Yes - with survey completion and work execution as per estimated costs	Yes - with survey completion and work execution as per estimated costs
Babbage Lecture Theatre, New Museums Site	73	((WAITING DATA))	((WAITING DATA))	£10,000	£2,000	£5,000	£0	£0	£17,000	N/A	N/A	Yes - with survey completion and work execution as per estimated costs	Wi-Fi Yes - with survey completion and work execution as per estimated costs Power No. Insufficient power; charging carts could be a solution, subject to funds and storage.
Faculty of Law	224	LG17, 18 and 19 Yes. The other rooms have insufficient capacity	Alternative power solutions, such as charging carts, could be explored for rooms with insufficent power.	£0	£2,000	£5,000	£0	£0	£7,000	N/A	N/A	Yes - with survey completion and work execution as per estimated costs	Wi-Fi Yes - with survey completion and work execution as per estimated costs Power No. Insufficient power; charging carts could be a solution, subject to funds and storage.
Lady Mitchell Hall	130	No sockets near seating areas	No sockets near seating areas, Alternative power solutions, such as charging carts, could be explored.	£10,000	£2,000	£3,000	£0	£0	£15,000	N/A	N/A	Yes - with survey completion and work execution as per estimated costs	Wi-Fi Yes - with survey completion and work execution as per estimated costs Power No. Insufficient power; charging carts could be a solution, subject to funds and storage.
Little Hall, Sidgwick Avenue	60	No sockets near seating areas	No sockets near seating areas, Alternative power solutions, such as charging carts, could be explored.	£5,000	£1,000	£1,500	£0	£0	£7,500	N/A	N/A	Yes - with survey completion and work execution as per estimated costs	Wi-Fi Yes - with survey completion and work execution as per estimated costs Power No. Insufficient power; charging carts could be a solution, subject to funds and storage.
Mary Allan Building, Hills Road	63	Yes	But noted space has booking restrictions and possible construction disruption	((WAITING DATA))	((WAITING DATA))	((WAITING DATA))	((WAITING DATA))	((WAITING DATA))	((WAITING DATA))	N/A	UIS Wireless but College managed LAN, need liasion	Yes - with survey completion and work execution as per estimated costs	Wi-Fi - waiting information Power - yes
Divinity School, Faculty of Divinity, West Road	60	Limited amounts of floor boxes, insufficient capacity. Could visit and check.	Additional power solutions, such as charging carts, could be explored.	£0	£2,000	£2,000	~£2,500	£13,331-£30,859	£19,831-£37,359	Connection to the UDN insufficiant capacity		CUDN team to understand the complexity / cost of improving the UDN connectivity. Esitamted range of costs shown, the exact cost will depend on the connectivity requirements in that location.	WiFi: Insufficient connection to the UDN. Power: Insufficient power; charging carts could be a solution, but they are costly and difficult to store.
Department of Materials Science and Metallurgy, 27 Charles Babbage Rd	60	((WAITING DATA))	((WAITING DATA))	£5,000	£2,000	£4,000	~£2,500	£13,331-£30,859	£26,831-£44,359	Connection to the UDN insufficiant capacity	Need clarity on location assumptions made	CUDN team to understand the complexity / cost of improving the UDN connectivity. Esitamted range of costs shown, the exact cost will depend on the connectivity requirements in that location.	WiFi: Insufficient connection to the UDN. Power: Insufficient power; charging carts could be a solution, but they are costly and difficult to store.
Cambridge Institute of Criminology	40	Limited amounts of floor boxes, insufficient capacity. Could visit and check.	Additional power solutions, such as charging carts, could be explored.	((WAITING DATA))	((WAITING DATA))	((WAITING DATA))	~£2,500	£13,331-£30,859	((WAITING DATA))	Connection to the UDN insufficiant capacity	Need clarity on location to provide estimate	CUDN team to understand the complexity / cost of improving the UDN connectivity. Esitamted range of costs shown, the exact cost will depend on the connectivity requirements in that location.	WiFi: Insufficient connection to the UDN. Power: Insufficient power; charging carts could be a solution, but they are costly and difficult to store.
Norwich Auditorium, Roger Needham Building	48	No	Construction on the Whittle project will continue throughout the 25/26 academic year, causing unacceptable noise levels for exams. Work to the space has been identified through previous studies which will be addressed in the wider works planned for this building. Timing to be determined. Therefore Norwich Auditorium not a suitable venue for 2025-26.	£5,000	£2,500	£5,000	£0	£0	£12,500	N/A	N/A	Yes - with survey completion and work execution as per estimated costs	Wi-Fi Yes - with survey completion and work execution as per estimated costs Power No. Insufficient power, which was within scope of works or alternatively, charging carts could be a solution, subject to funds and storage.

[3] Costs might rise if the survey reveals complexities for installation in each venue.