

**Event Title:** Achieving 21<sup>st</sup> Century Learning and Teaching Strategies in 20<sup>th</sup> century buildings



**Event Date:** 9<sup>th</sup> January 2020

**Location:** Imperial College

In October 2017, HEDQF in partnership with King’s College London spent an evening discussing the theme [‘Is the Lecture Theatre Dead?’](#). That event was held in newly created teaching spaces in Bush House, former home of the BBC World Service that had been completely refurbished by King’s College London to enable both expansion and transformational change in teaching and learning pedagogy. The broad conclusion was *‘news of the death of the lecture theatre is premature; it is not dead, but is slowly evolving in a variety of ways’* ...

Two broad trends are increasingly evident: a tendency to volume-teaching with larger and larger cohorts, matched by an opposite (and perhaps compensatory) tendency to smaller learning group sizes as institutions change their teaching methods. These dual trends are causing many higher education institutions to look hard at how they can adjust their learning estates for 21<sup>st</sup> century methods of teaching and learning, both in terms of new facilities, and also the particular challenge of updating their existing legacy buildings, many of which were built in the 20<sup>th</sup> century and some in the 19<sup>th</sup>.

Imperial College hosted a visit and discussion afternoon, continuing on from this theme, with a particular focus on refurbishing 20<sup>th</sup> century Modernist buildings for 21<sup>st</sup> century learning and teaching. The afternoon started in the new [Digital Learning Hub \(DLH\)](#), with a talk and tour by Gideon Shimshon, Director of Digital Learning and Innovation, who described how these experimental spaces aimed to encourage new ways of teaching and learning at the university, while keeping technological infrastructure simple, minimalist, and almost invisible.



The DLH is a flexible multi-purpose set of spaces created in a 19<sup>th</sup> century former Chemistry building, showing that flexibility can be achieved in legacy buildings with creative design. It has spaces of different types – the main space, surprisingly and purposely, has no obvious technology within it – reinforcing independent thinking, intergroup interaction, creativity and innovation without the need for technology. Flexible furniture, an abundant supply of writing pens and post-it notes and walls and desks that can be written on support the College’s move to support more active learning. The immediately adjacent second set of relatively small spaces are designed to support up to 1000 students globally in live online learning. Again, the infrastructure is minimalist and simple – the key is in the collaborative software linking to devices such as mobile phones and laptops which students already have and can use from anywhere. Asked about uptake, Gideon gave the example of a current course with students enrolled from 30 countries. He then demonstrated by signing into a session on his phone how those students could be involved in teaching and learning from anywhere around the globe and brought virtually into the learning room on very large dual screens.

Available to Departments across the university, the take-up of the new facilities has been excellent with a number of new digital courses already produced, and with more of online classroom projection spaces being created. Furniture is again flexible, from formal boardroom to informal and playful. A final space houses a professional light and sound proofed videography studio supporting academic staff in the creation of broadcast quality video material for both campus based on fully online courses.

Then to the new Collaborative Lecture Theatre in the Physics Department in the Blackett Building at Imperial College. A very impressive space, where, within the spacious but inflexible original 1950s architecture, a new 21<sup>st</sup> century Collaborative Teaching Space has been created in a traditional lecture theatre which was last refurbished in the 1980's. The conversion of the Blackett Lecture theatre was explained by Craig Walker, Strategic Lead for Education Infrastructure Development at Imperial College to be driven by the university's Learning and Teaching strategy. This strategy, now in its 3<sup>rd</sup> year, is introducing broad-based interactive methods with high use of digital and online learning to all programmes and is placing very different demands on the legacy teaching estate. The Vice Provost (Education) Simone Buitendijk is leading investments to improve the quality of all learning spaces, modernise equipment, and trial new and novel ways of improving the flexibility and intensity of use of legacy teaching spaces.



As part of this drive for greater flexibility, Craig Walker explained that the Blackett lecture theatre is a pilot exploring how best to increase the flexibility and intensity of use of traditional lecture theatre spaces. More specifically, the pilot explores how a mid-sized department embedded lecture theatre can be retrofit to support small group interactive teaching at scale while preserving the ability to teach didactically, with minimal loss of capacity.

The discussion moved onto the question of how many seats were lost, with Craig Walker arguing that the question is not how many seats are lost, but rather how many different types of learning and teaching can now be supported really well in what was an otherwise inflexible traditional lecture theatre. Nicholas Burwell, architect for the project, made the point that in most lecture theatre conversions he would anticipate between 10% and 30% reduction in capacity, acknowledging that in the case of the Blackett conversion the aspect of the room had allowed a design that achieved effectively no reduction in overall didactic capacity.

Workshop participants were invited to critique the space, with the conversion being very positively received in its context as a legacy space retrofit to support interactive pedagogies, in particular the sensitive use of timber for aesthetic and acoustic qualities. Comfort was observed to be no worse than that of a good lecture theatre – and in some ways better – achieving a learning experience approaching the *“intimacy of a box in a theatre”*, though there is a discomfort from the front row of bench seats when only the audio visual screens are used (due to viewing angle). It was observed that this was a space designed around the use of chalk-board, which is part of the performance aspect of Physics and similar discipline teaching. Tweaks that were discussed and suggested be

considered in future conversions included writable surfaces on the tables and walls, larger projection screens that come down lower for better sight lines (accepting consequent loss of visibility of the chalk boards), technology to facilitate collaboration between the group tables, and more USB charging points. It was noted that students had already adopted the space as their own and several separate groups were working in the space when the workshop participants arrived.

Luke McCrone, a PhD student with Imperial College Centre for Higher Education Research and Scholarship is researching how the converted space is affecting learning and shared highlights of his interim evaluation. Key points included that there is no indication from lecturers that the space makes it any more difficult to teach didactically, that teachers report the space makes it easier to carry out interactive teaching, and that there is early evidence of a potential ripple effect of teachers in this space introducing interactive methods into their teaching in other traditional spaces. An interesting anecdote was that some lecturers felt that this space was in some important ways an improvement over flat-floor project spaces, and this needs to be further explored. Luke is also exploring the importance of physical transitional space in supporting more innovative ways of learning as students leave and enter the classroom. This has resulted in investment in a suite of transitional space renovations at Imperial. Workshop participants were particularly appreciative of Luke's explanation of the educational benefits of the space, with one commenting that the model of a PhD student research feeding into the benefits appraisal of an estates project was an approach well worth considering elsewhere.

Looking elsewhere, Ian Caldwell described the very simple, economic and flexible refurbishment of another 20<sup>th</sup> century building, the Brutalist 1970's Macadam Building at the Strand Campus of King's College London which had originally been designed for student activities, recently housing a double-height nightclub (Tutu's), bar and café areas, with expansive views across the Thames, Careers Service, Health Centre, Student Union offices and other facilities which had all moved into the refurbished Bush House. Working with the plan shape and the characteristics of the building, the university had achieved a series of flexible spaces across the different floors with considerable use of internal glazing to make best use of views and daylight

Paul Glassey, Assistant Director (Media Services) at Brunel University and Ian Goodfellow of Penoyre & Prasad then described the new 7,500m<sup>2</sup> Learning and Teaching Centre which sits adjacent, and in counterpoint, to the Brutalist Grade-2 listed Central Lecture Centre (CLC), completed in 1968 to designs by Richard Sheppard at the heart of the campus. The new building is designed to provide a vibrant 'student heart' to complement the immense CLC building. The brief was for a transformational student experience to support 21<sup>st</sup> century methods of teaching and learning that is technology enhanced, team and project based for peer to peer learning in a variety of different spaces, with a philosophy of 'information/test/group work/test/develop'. A key aim was to keep the technology appropriate but simple in open, light, airy spaces with substantial provision of power and data, moveable furniture (without wheels because they become damaged), moveable and writeable walls.

A question remained, posed by Gary Jebb from the University of Edinburgh, which returns to the theme of the lecture theatre. If your existing 500-seater lecture theatre is at full capacity and there is demand for a new one, how do you respond to this, given the likely high capital cost. Can you create a space that has flexibility for other activities? The experience at King's College London is that that it is difficult – there is a danger of compromising the different uses, hence the decision in the Macadam Building project that a proposed double-height multi-use space on the top floor should be focussed on teaching – and doing this well. The reality is that they have other spaces for events, performance and other activities. One suggestion for such flexibility is to look at the world of theatre and the use of the elliptical plan form, which can provide more flexibility than the traditional rectangular form. The obvious question is why do you need a 500-seater lecture theatre

– Imperial College can have an event for 1000 people in the space of a 20-person meeting room using simple and proven technology in the Digital Learning Hub.

A final question briefly discussed was teaching and learning outside the formal learning and teaching spaces, for example in student residences and for those not living in residences. Craig Walker indicated that the Imperial College Digital Learning Strategy is aiming to extend beyond the physical constraints of the university itself, and exploring models of education delivery that allow students to engage in their education at a distance of their choosing.

Thanks to the speakers, to Imperial College to hosting, and to all participants in what was a thought provoking and interesting discussion.