

The **Design** and **Management** of **Open**
Plan **Technology** **Rich**
Learning and **Teaching** **Spaces**
in **Further** and **Higher** **Education**
in the **UK**

Case Studies

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Hugh Anderson – Principal haa design
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Introduction

These case studies originate from the JISC commissioned study of the Design and Management of Technology Rich Learning and Teaching Spaces in Further and Higher Education in the UK. Each case study is a short story of the facility that was visited as part of this study and no attempt has been made to make them comparable, Rather we have concentrated on their individuality demonstrating that open plan technology rich spaces come in a wide variety of forms, are individual to the context in which they exist, and evolve in subtle ways to fulfil institutional needs. Each space tells a subtle story about the institution in which it exists. These case studies are linked to the main report for the project by the issues that they raised initially in the questionnaire that they completed. Each has an interesting story to tell about the issues that concern those that manage these spaces and how they are dealing with these issues.

Institution - University of Sheffield

Space – The Information Commons

Opened – Spring 2007

Respondent – Dr Christine Sexton

Role – Director of Corporate Information and Computing Services

The "Information Commons" is a new-build facility that the University started to plan in 1998. It is a concept developed by the University Library Service and Corporate Information and Computing Services and is jointly operated by these departments.

The building ranges over 7 floors and has a total floor area of 8000 square metres, has 1300 learner seats, 100,000 volumes (which are all reference or short loan stock), 520 PCs, 50 information kiosks, 10 group study rooms, and 2 teaching rooms. The building is also the home for CILASS (Centre for Inquiry Based Learning In the Arts and Social Sciences). The



"Information Commons" provides an additional resource for the University and is not a replacement for other facilities such as the Library.

Exterior of the Information Commons

The building was visited only a few months into its operation and there were still a number of commissioning issues outstanding. We were informed that there had been a very short time between handover of the building and its opening (a matter of a few days). One consequence of this was the occurrence of

power outages. The original aspiration had been to have power available beside all soft seating units in the form of floor boxes. However the floor boxes that had been installed did not have easy access to power sockets. They were of the circular cover type and were difficult to open. Insufficient service sockets (for cleaning appliances) had been installed and cleaners had reverted to using power supplied through the floor boxes which was resulting in fuse failure and power outages.

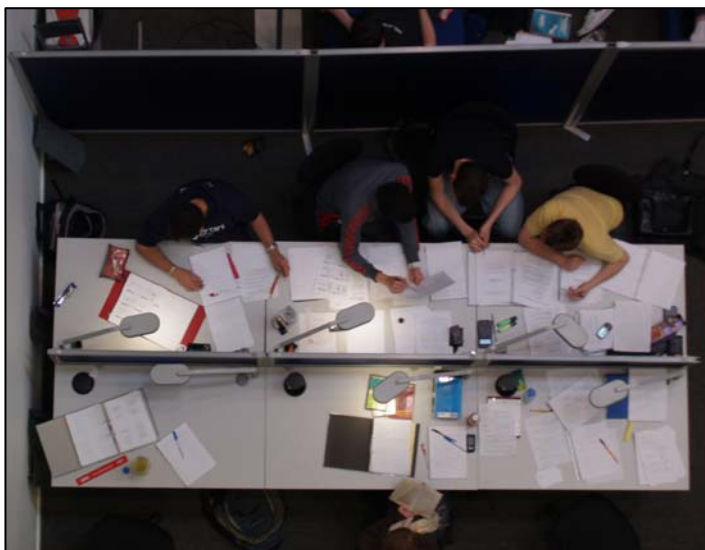
The building is air- conditioned and uses an under floor ducting system to distribute cool air from the chillers. On the day of the visit the building was a little warm and this was stated as a

common problem – indeed on the day it is often very hot, but this was one of the hottest days this year. Since the visit it has been reported that the air conditioning system is functioning well.

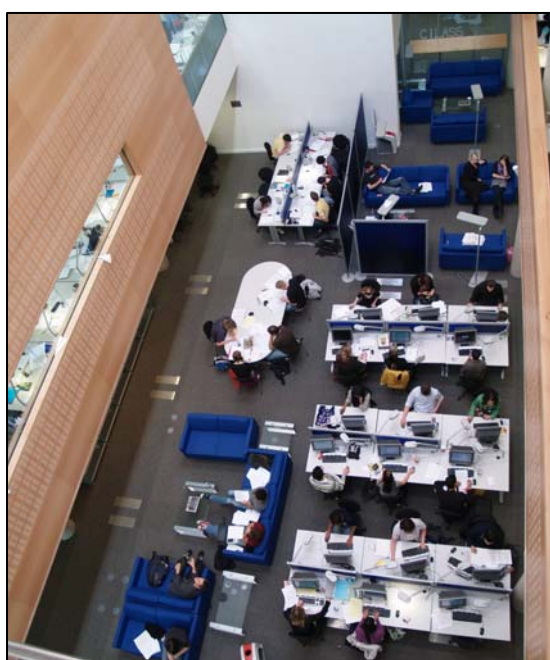
Right: Group study tables and partitioning between group study spaces.

A major issue highlighted was ***litter from food and drink consumption***. The building is open 24 hours 7 days a week and the date of our visit was the day after the bank holiday when staff had been on holiday (except for essential security) and students had made heavy use of the building. There was quite a lot of litter around the building. The rules for food and drink are that cold drinks can be consumed anywhere

(sports top bottles are advised) and cold snacks can be consumed in the designated soft seating areas, but hot food and drink can only be consumed in the ground floor café area. The café servery is not open 24x7 but the space is available 24x7 for consumption of food and drink that has been brought into the building. However it appears that during the overnight period when the building is staffed by two security staff the students consume all kinds of food and drink throughout the building and leave lots of litter around. We were told “students tend to treat the building like they treat their home”.



A number of actions have been taken to change this behaviour and reduce the amount of litter. More and larger bins have been ordered like those in the ground floor café. Following discussions with the Facilities Department additional cleaners are being hired so that the building can be cleaned at intervals throughout the day rather than just at the start of the day. This continuous cleaning regime is likely to significantly improve the situation. A forthcoming newsletter about the building is intended to clarify the ‘rules’ on food and drink.



There are also ***issues about the shelving of the books*** in the building. The books are rfid (radio frequency identification) tagged and short loan books (which can be borrowed for 3 days) are self-issued and self returned. Students tend to leave books lying around on desks rather than replacing them on trolleys as requested, making the job of re-shelving more onerous as books have to be collected first.

The building is on a busy road intersection in the city but does not suffer from any traffic noise inside. Interference from external noise has been ‘designed out’ using effective double-glazing and other acoustic materials.

Left: A mixture of formal and informal learning space with the wall (on the left of the photograph) separating the silent space.

Much of the building is open plan space with a central stair well. Although the building was busy on the day of the visit, conversational noise did not appear to intrude and there was an

acceptable working buzz. There are two silent floors which are separated by a wall from the rest of the building and which provide an extremely quiet working environment. Initially laptops and computers were not allowed in this silent space but now they are, in response to student request, on the balcony level. In addition there is a silent study room equipped with PCs on the first floor. It should be noted, as mentioned earlier, that the 'Information Commons' is an additional facility with the remit to provide a variety of learning space and that the University still has its Library which is mostly quiet/silent space.

When the building was opened students tended to be very quiet, as they had only had experience of the University Library. The noise level increased over the first few weeks and then became too noisy. Now behavioural guidelines have been formulated to guide users in expected levels of noise.

The silent study area works very well and the whole building is moving towards a culture of self policing e.g. users will rebuke those whose mobile phone rings whilst in the silent study area.

There are 10 bookable group study rooms. The University previously did not have any of this type of space and these rooms are very popular.

Each of the main floors has a 'business unit' structure that carries a self-issue machine (on 2 of the floors only), colour and black and white printers, photocopiers and "value loaders" (machines for crediting cards that are used for printing and photocopying with cash).

Colour has been used to identify each floor with some repetition of colours e.g. 5 and 6 are both purple.

The building is not open to the public and has received some criticism that is it not a true 'commons'.

Interestingly students have formed a number of "information commons" groups on Facebook with overall feedback being mainly positive. Any negative comments can be addressed immediately and the fact that students have, in effect, started their own feedback channel is useful as it gives rapid continuous feedback on user opinion.

As in most spaces such as this there is an issue with students using the "beach towel" method to make sure that they can access a computer for long periods of time. They leave their 'stuff' on the desk and the seat while they go off and have lunch or go shopping. As these are rivalrous resources these behaviours are expected. In the Information Commons when this is seen to be happening a warning note is left for the returning student. Persistent offenders then have all their 'stuff' removed and sealed in a plastic bag that is held at the security desk on the ground floor for the student to collect.

An interesting point is that although the new building is an additional facility there has been no reduction in use of facilities elsewhere on the campus. This then raises a question of where were these students working beforehand or has there been a net increase in learning activity?

The evaluation of the building has started through the use of comments cards, a web site for comments, and an independently conducted student survey.

Institution - Loughborough University

Space - Open3

Opened - 2007

Respondent - Dr Graham Walton

Role - Service Development Manager, Loughborough University Library

Open3 is a dedicated area of the existing university library; it is managed by library services and functions as a group-working and social commons.

The library was completed in 1980 and is a 3-storey concrete framed building with recessed bands of glazing. Essentially it is square in plan with blockwork cores organised at 45° to the main grid containing services and stairs. The existing building has no specific issues with heating; lighting or ventilation and therefore the physical infrastructure of the library remained unaltered other than providing additional extract over the café serverly.

Open3 originally only provided fixed PC workplaces. Wireless was introduced to the space 6 months after opening and additional perimeter dado power supply is being installed over Summer 2007 due to the increase in laptop usage. The university has been tracking laptop use and despite its increase there is still a continuing requirement for fixed PCs, particularly favoured by students are those with the provision of adjacent layout space.



Left: Group work at Open3

Originally the building was laid out as a traditional library with silent study areas only, however **behaviour and noise were becoming issues** because students were using the larger format tables for group working. Library services came to realise that with the increase in student involvement on collaborative projects, the zoning of different types of study space would be required in order to manage the noise issue. Initially group work was confined to zones within each floor this however this created a disturbance to others. Open3 came into being on deciding to bring all group working into level 3, the main entrance level, providing workplaces for 200 users and reclaiming the adjacent under-utilised teaching spaces to provide enclosed group working spaces. The remaining 2 floors still operate as silent study areas for individual work.

Very little of the furniture used in Open3 was purchased new; it was mainly redeployed from elsewhere therefore the budget for creating Open3 was a minimal £5k. Separate funding was received for bringing in a franchise to operate a café adjacent to the library entrance. Initially the café was accessed separately from the outside but, with the creation of Open3, it has been fully combined into the group working area, providing a blended version of a social commons.



Left: The café at Open3

The policy of permitting drinking and eating, of hot and cold food, throughout the café and Open3 has proved to be conducive to reinforcing the no food and drink rule in the levels 1 & 2 and subsequently the need for monitoring has been reduced. The success of the social commons has led to plans to introduce additional soft seating areas over Summer 2007.

Access to the building isn't normally 24/7 although there have been 2 trial periods of 4 and 7 weeks this year. These proved extremely successful producing an increase in footfall of 20,000 with no greater increase in management issues other than in relation to cleaning. The impact that Open3 would have on the scale of the cleaning task was relatively unforeseen at the outset. Now that it has been identified an increased budget has been allocated and the

task of cleaning is being managed according to the requirements of the intensive space usage that such a space implies.

There is a policy of no signage in Open3; this has resulted in an area that is more or less self-policing and requiring minimal management. Open3 is a good example of a very low cost venture bringing a high return in terms of usage and positive feedback from users.

Institution - University of Sunderland

**Space – The “Information Terraces”, The David Goldman Informatics Centre
Opened – 1996**

Respondent – Professor Peter Smith

Role – Chair of Diversity

The "Information Terraces" is one of the longest established open plan technology-rich spaces in a UK University. During its ten-year history it has undergone a number of changes that mostly involve enclosing, or partially enclosing, some of the open space for use as offices or activities such as specialist (grid) computing.

The original conception was an open plan technology rich teaching space – partly inspired by the "Octagon" at Staffordshire University. In its turn the Information Terraces has provided a source of ideas for other buildings such as the Technology Centre at the University of Wolverhampton. The underlying concept is one of social learning effected by having students and staff working as one together, all learning together, and 'in it' together. The metaphor for



the space is linked to shipbuilding, a one time booming local industry – the building is shaped like a ship and the terraces are akin to decks of the ship, there is also a point in the building (the bridge) from where the whole space can be viewed. A modification to the entrance of the building is planned for the near future to provide informal social space that is felt is currently lacking in the building.

Left: View across the terraces from the 'bridge' of the 'ship'

As with all buildings on the campuses of the University of Sunderland, the "Information Terraces" is a low maintenance building making extensive use of concrete and wood with white painted surfaces and solid beech doors throughout. This recipe of high quality furniture and fittings has served the University well by providing buildings of enduring quality with little evidence of wear and tear except in items of furniture that has high levels of use.

The 550 computers are arranged on three terraced levels, lower, upper and middle and are grouped into 'pods' for teaching purposes each with a marker flag equivalent to a room number. Pods are zones of 25 fixed PCs arranged in rows perpendicular to a teaching wall equipped with a flipchart and whiteboard. These are predominantly used for teaching but can also be used by students for drop in when not booked for teaching, and have minimal separation from each of their neighbours. In general this arrangement works well although there is some noise, from printers and people as students converse during their work, when occupation is at its maximum.

The Technology Centre at the University of Wolverhampton also has the mix of teaching and drop-in but the arrangement of furniture is more flexible and less formal. Fixed PCs are arranged on circular desks in groups of 4 and clusters of these groupings can be booked for any required group size. This makes for a more organic working arrangement that can be tailored for small tutorial groups or full classes of 25 or more students.

In Sunderland and Wolverhampton there seems to be little issue with respect to the mix of drop in and teaching taking place in the same space. It is described as “like working in an open plan office”. There also seems to be little issue, unlike the Trading Floor at UEL, with ‘teaching’ taking place in adjacent spaces. This may be because of the nature of the subjects being taught and the approach taken. In Wolverhampton a ‘whole campus’ approach is taken which emphasises that a variety of different learning and teaching spaces are provided and wherever possible staff should use the one best suited to the activity taking place. Certainly at Sunderland the teaching is largely workshop based computing teaching which tends not to be teacher centred, whereas at UEL a wider range of subjects are taught with a greater instructional or teacher centred component.

In the early years of the operation of the Terraces guidance on ‘terrace etiquette’ was drawn up and given to students but this is no longer felt to be necessary. In its place there are basic rules such as no eating and drinking and no mobile ‘phone use. However the proposed social area that will allow eating and drinking is likely, from experience elsewhere such as at Glasgow Caledonian, to spread to other parts of the building. Whilst there is a relaxed approach to this it will test the current behavioural regime.

The building is actively ventilated with a centralised temperature and humidity control. The system is split into 2 zones: 1 for the 4 lecture rooms and the other for the remainder of the building.

Despite this there is still a large variation in environment from space to space which would likely be accounted for by the location of the space, hotter at the upper levels, and degree of enclosure.

There are complaints about the temperature from those using the space but this comes mostly from those in individual offices although these have a supplementary wet radiator system. The additional enclosure of what is essentially an open plan space, particularly on upper levels undoubtedly complicates temperature control.



Left: Newly created offices on the upper levels

There is increasing use of The Terraces by other courses, rather than computing, as the demand and recruitment for computing courses declines (nationally). The Terraces are populated with desktop machines and technology changes such as the move to portable computers are starting to impact the space, as are University priorities. Consequently the School of Education IT section are now housed in the building, as is the Business School and the Grid computing facility.

The Terraces were previously open 24/7 but now close at 10pm as the University has focused its 24/7 resources in the Library. Wireless network access provision in the student residences had a noticeable effect on the use of the Terraces. A further driver for reduced opening hours was the ‘greening’ of the campus and the desire for the University to have reduced carbon footprint.

User support and oversight of activity is provided by a help desk in the middle of The Terraces that is staffed by support staff from the Schools of Computing and Business.

Institution – Harrogate College – Leeds Metropolitan University

Space – Library and IT Suite

Opened – 1960s refurbished 2000

Respondent – Arthur Sargeant

Role – Campus Library Manager/Senior Learning Adviser

Harrogate College was formed some years ago from the Harrogate Further Education College and Art College and 8 years ago became a College of Leeds Metropolitan University. During 2007/08 it is planned that the College will 'demerge' from Leeds Metropolitan and seek merger with an FE partner. Currently the College provides courses for students aged from 14 to 80.

The open plan facility consists of two large rooms on the second floor of a 1960s building arranged at right angles to one another. The 2004 refurbishment aimed to create informality. In the 'library space' there are learning (study) spaces, book stock, and a small number of

computers. In the IT suite there are 64 computers arranged in clusters with 80 seats. The IT suite is used both for teaching and drop in.



Issues reported in the questionnaire return were heating, ventilation. Noise and behaviour.

Left: Harrogate College – external view

The heating and ventilating systems are the original ones installed in the 1960's building and were reported to be inadequate for the current use of the space – it was originally office space with a much lower occupancy rate. The spaces are **too hot in the summer and too cold in the winter.**

Many of the windows are bolted closed and those that can be opened only open a small way and therefore there is poor airflow through the building. The heating and ventilation system was originally controlled from Leeds but now there is some local control. The IT centre has less of a problem as extensive air conditioning has been installed.

The library space is a single rectangular open space that has a welcoming feel. When refurbished, on a small budget in 2000, care was taken to provide both quality and comfort. During the refurbishment design thought was given to:

type of shelving – coloured with glass ends making it an item of furniture

types of furniture – for example large study tables were chosen that can be split into 2 to accommodate different group sizes and tub chairs were provided in informal spaces

arrangement – angled shelving has been used to provide niches for study and privacy

Although this is a small space and its look and feel are largely pre-determined by the large amounts of glass, with little expenditure a good look and feel has been achieved. An issue with this space is that, due to its size, it is not possible to have both conversational and silent spaces within it and therefore a separate small silent study room has been provided.

The building also makes use of a number of photographs showing students studying and student artwork that subtly suggests the type of use expected in the building.

The IT suite is used for both teaching and drop in. The 64 computers are arranged in 6 bays and teaching does take place in adjacent bays at the same time. However the space is not ideally suited to didactic teaching and favours a workshop approach. It is felt that some teaching staff like to use the space for teaching because of the informality that it brings to a lesson (for example, because the space can also be used for 'drop in' a student 'dropping in'



may (inadvertently) start a conversation with a student that is participating in a taught session). The space encourages not just informal learning but also informal teaching.

Left: Informal Study Space at Harrogate College

A key management issue, for an open space of this size that accommodates multiple users, is **what is acceptable as noise and behaviour** – when does this become disruptive? This is clearly a matter of judgement and different users (14 years of age to 80 years of age) have different thresholds. The important consideration from a management viewpoint is

consistency, for example students making a noise engaged in their group work can easily be reminded of the need for moderation whereas if students are making a noise in a taught group intervention by library staff may not be appropriate – indeed it may be that sometimes library staff are used by tutors as a reason to modify behaviour.

There is recognition that noise and behaviour control is best managed by developing good relationships between library staff, teaching staff and students. A joint understanding and good working relationships are much more preferable to policed interventions. It is felt that subtle social control is important and the strategy of a staffed help desk and occasional 'tours' of the space provide a cost effective way of exercising this 'light control'. "The space isn't an issue – it's the people".

Both of these facilities have limited space in which to provide the variety of learning environments that the College aspires to. However in both cases the issues of arranging and managing open plan space has been dealt with imaginatively and successfully. However for both of these facilities the second floor location is an issue – if student learning and group activity is important part of the College learning and teaching strategy the spaces would be better located on the ground floor as a facility greets its learners as they enter the building.

Institution – St Martins College – now the University of Cumbria

Space – The Learning Gateway

Opened – Dec 2005

Respondent – Margaret Weaver

Role – Head of Learning and Information Services

In the questionnaire response this facility reported ***minor problems with some aspects of the space but highlighted the new space booking system as a more serious problem.***

The Learning Gateway is just over 2000 square metres and split over three floors. Although this is not large it does include open flexible learning study space, social learning space with wireless IT access through laptops, a 140 seat lecture theatre, and a range of rooms for group study and teaching – known as Flexi-rooms. A variety of seating areas are available in the space from formal to informal. The building is bright and airy with a central atrium. Good use has been made of furniture; for example pods with banquette seating to break up the space forming a number of separate environments. Colour has also been used to set a range of moods within the space.

Right: The Learning Gateway (centre of photograph) external view

In terms of heating and ventilation the Learning Gateway is built on a green formula; passive ventilation relying on a system of automatically opening and closing windows. ***The system works satisfactorily but is still in need of some fine-tuning.*** For example the lecture



theatre in the building is air-conditioned and is sometimes too cold. The Building Management System that controls the Learning Gateway is in Lancaster and the building is in Carlisle so there does tend to be a lag in adjusting to temperature changes.

The booking of space was raised as an important issue in the questionnaire response. Initially the University had a policy of defining space as generic, dedicated or specialised (e.g. subject specific laboratories in teaching buildings). This system has been revised recently and there are now only two kinds of space defined: generic or specialised. The adoption of a new system for room bookings and pressure from the institution for all space to be on this system is now putting some pressure on the use of space in the building. Such changes at institutional level impact significantly on a facility like the Learning Gateway that is focused on promoting change. Such a facility needs to be available as much as possible for 'serendipitous use' by students if it is to make the best impact on individual and institutional behaviours. As a compromise and to be sure that there would be some 'serendipitous use' of the space half of the Flexi-rooms are on the timetabling system and half are managed by LIS staff. The open spaces in the Learning Gateway remain open access and are not bookable. The Flexi-rooms within the building that are bookable cannot be booked by students. As the University Estates strategy rolls out there is increased pressure on space (as the strategy has to provide for a refreshed curriculum, additional staff and subjects). In addition as University status approaches the Vice Chancellor and his team are relocating from Lancaster to Carlisle putting even greater pressure on space from August

2007. In response, rooms in the Learning Gateway are now being adapted to take larger classes (of 60 rather than the current 30) by making use of moveable partitions.



In addition to its role as a centre for student learning the opening of the building has stimulated a whole new strand of activity from conferences – but students continue to take overall priority. Even when used for conferences the Learning Gateway remains open to students and they also play a part in conferences held.

Left: A modern version of the study carrel at the Learning Gateway

The creation of the Learning Gateway was stimulated by a Higher Education Academy “Change Academy” programme. The impact of the Learning Gateway is such that it will inform further building at the University.

The Learning Gateway is a deeply cultural change agent for the University of Cumbria and is linked to the “academic identity” of the institution. The issues over space pressure and booking, comments Margaret Weaver, are a symptom of the tensions created by cultural change and a natural reaction in the institution to resist this change.

It is clearly important that a space like the Learning Gateway is subject to evaluation, however the University Estates Department seems likely to use the Higher Education Funding Council space evaluation methodology which, whilst it does measure levels of use, is highly inappropriate for this type of space; the kind which exists to bring about educational change.

Institution – Leeds Metropolitan University

Space – Civic Quarter Library

Opened – 1960s refurbished 2000

Respondent – Fiona Middleton

Role – Deputy Director of Learning Support

The Civic Quarter Library of Leeds Metropolitan University was refurbished in 1999. At this time the building had a new heating and ventilation system installed. In spite of the new system heating and ventilation continue to be a source of complaint from both staff and students. **Maintaining temperatures in the open plan space and offices at the same time tends to be problematic.** The current system responds to external temperature and the internal temperature therefore often lags 24 hours behind external temperature changes. Control of the system lies with the Estates department.

Noise is the biggest problem for the library and is linked to the range of activities promoted. These activities include social learning, networking and group study which all tend to be conversational and mainly take place in close proximity to the Help and Information Point 'interfering' with its operation. An important factor affecting 'noise' is the 'ownership' of the space; the space, although it is within the Library, is not considered to be Library space rather University space. The result of this is that there are an increasing number of activities taking place in the space. For example Faculties of the University stage exhibitions – in itself not problematic - but with some events there can be unexpected speeches and presentations that disrupt the activities of staff delivering Library services and of other users.

Noise is managed by having zoned floors of the building. It is recognised by the library that noise is generated partly from activities they wish to encourage and promote – but the group study floor did get the unfortunate label of the "party floor" originally, following its creation. Zoning, into separate floors for different noise levels, has been successful in separating activities that interfere with one another.



Left: Group study spaces at Leeds Metropolitan University Civic quarter Library

As well as the group study floor there is a silent study floor and provision for computer use at fixed PCs and space for laptop use. It is unlikely that there will be an increase in the provision of desktop PCs as the availability of wifi networking has been increased and this works well with soft seating, more formally arranged group study areas, and the use of laptops.

Mobile phone use is always an issue in Library spaces and Leeds Met has a policy of allowing mobile phone use only in corridors. Use is not actively prohibited in group study spaces though neither is it encouraged, but it is recognised that mobile phone use is often for legitimate work purposes

Food and drink consumption is an issue for the Library and it has recently developed a policy and user guidelines on this. Eating and drinking in the Library space also presents a litter problem – but the guidance can cover this as well. Extra cleaning, bins and patrols have been organised to try and deal with this problem.

Right: Guidance on eating and drinking in the Library at Leeds Metropolitan University

The Library collects regular feedback from Library users and responds to this as far as it can. When students are unhappy with changes made there is a strong correlation between the amount of time that they have already spent at the University and their level of unhappiness. The Library sees the process for improvement as a continuous one of piloting developments, reviewing them and making further improvement on them.

The Library recognises that they should provide choice and that students are now learning differently and making extensive use of technology. Learning is now more social. There is a need to defend change and make it work – “Our premise is that the student comes first”. Whilst focus groups are used to help gather feedback the role of the library professionals is felt to be about raising awareness of the possibilities. Consequently the Library is viewed by the institution as a key driver of the Assessment, Learning and Teaching Strategy. The overall policy within the Library is not to tell anyone that they can't do something – but to provide alternatives so that they can – the provision of open plan technology rich space is one way of saying yes.

Food and drink in The Library

Civic Quarter Library

We are piloting a scheme to allow a limited range of snacks to be eaten in the Library. Please let us know what you think. The scheme will run until Christmas 2006 and will let you:

- Bring snacks (e.g. sandwiches, crisps) to eat in the first floor group study areas. This includes hot drinks, as long as they have lids on them.
- Bring bottled drinks into any area.
- No hot food is allowed in any area.

We have put extra bins on the first floor to cope with the additional litter. Please use these so that the study areas remain pleasant and clean for other students.

Please let us know what you think about this idea by filling out a customer comment card.

leeds metropolitan university

Institution - Glasgow Caledonian University

Space - Saltire Centre

Opened - 2006

Respondent – Tom Finnigan

Role – Director of Learner Support

Glasgow Caledonian University's Saltire Centre has been well publicised and has become something of a 'cause celebre' in the discussion of new learning centres. It is physically dramatic with lots of the SCOUNUL 'oomph' factor, it also stuck its neck out in attempting



various new ways of doing things, previously tested on only a much smaller scale. Having been in operation now for over a year and with some of the initial razzamatazz having died down, it is interesting to get an impression of what has and has not worked. In general while there have been some adjustments it would seem that the building is coming into its own, and, of the major new complexes visited and analysed, would seem to be the most successful, not just at the level of having created something seriously different, but having dealt with most of the practical problems of providing workable space at a daily level.

Above: Services Mall at the Saltire Centre

Opinions are inevitably individual but the situation at Caledonian University is a little different in that it is one place where a user survey has been attempted. Thus in a survey of over 3,000 students in 2006, 92% returned a verdict of "good" or better with 32% describing the facility as "exceptional". Thereafter the popularity of the facility amongst students is more than proven by the huge usage that it has attracted. By contrast most criticism has come from staff or from existing year 3 and year 4 students, whom it may be surmised, are more familiar and more comfortable with traditional facilities. The new building deserves therefore to be taken seriously, not necessarily as the exemplar for all new learning centres, but at least as a most interesting testing ground for a series of physical and managerial strategies.

The new facility is bold and makes a strong first impression, but this belies a more subtle building and management strategy not fully appreciated by some critics. The building has big open plan spaces and gives the impression of being part of a large atrium space, but the different "reading rooms" are in fact separated floor by floor and separated from the atrium. This means that the noise (such as it is) and the air movement (which is key to its passive environmental control system) are independent of the more conventional "library" spaces. In analysing the building therefore one has to distinguish between level '0' which contains the café, the student support spaces, a certain amount of open book stacks and the main entrance (which comes in at level 1, but within the common atrium space), and levels 2, 3 and 4. Unlike some older buildings however where, short of reading the directory board, users are essentially unaware of the rest of the learning facility, in the Saltire Centre the building makes up a single experience with visitors coming and going and sharing the buzz of the social facilities on level '0'.

With regard to noise (which was reported as something of a 'non-issue' and with the few separated work areas being "marginally used") it was considered that the building was still going through something of a transition phase where those used to the study carrels of the old building were not particularly happy, but constituted a 'minority' albeit a vocal one.

Furthermore it was also considered the image of the building on the ground floor belied what was happening on the upper floors where the spaces were zoned from “medium social” to “totally quiet” and operated on a much more conventional basis. The fact that there might not always be sufficient seats of choice was the unfortunate result of the building’s popularity.

Besides the obvious zoning between floors, the building illustrates various other strategies across its open plan spaces. On the upper floors the noisy elements – photocopiers and people clustering around printers – are contained within the stylish “printer pods” which serve to partly contain and modulate noise, and, along with the limited number of open bookstacks, to structure the floor as a whole. The same strategy is utilised on the ground floor where the iconic tents and inflatable pods give definition to a floor otherwise rattling with low furniture, and which provide psychological (if not physical) protection from working groups immediately alongside. Separation in the form of balconies projecting into the atrium space similarly removes the famous ‘lounging’ areas (complete with bean bags) from the ‘library’ spaces. **A possibly less successful experiment comes in the ‘separated work areas’ on each floor, or more correctly ‘alcove spaces’ which have in some instances been turned into places for limited teaching.** These spaces (fully enclosed on level 1, with modified ventilation to suit) consist of $\frac{3}{4}$ high ‘U’ shaped partitions which partially close off the alcove spaces. The idea is that with movable low-level partitioning, relatively self-contained spaces can be immediately formed to suit particular needs. Providing visual screening however, but without acoustic separation, **it becomes easy for groups to start making a noise in the mistaken belief that they are in fact separate**, and to properly enclose the spaces at this stage is not particularly easy, given the ventilation strategy of the building.

Right: Saltire Centre graphics from Ground floor space



Ventilation, with the exception noted above, generally works well, albeit based on pre-determined air movement through the atrium space. As has been noted, this ‘chimney’ strategy, separated from the main floors, allows for reasonable re-direction of treated air about the building. Only the staff office on level 1 causes problems, where the Reglit glazing (which divides the space from the adjacent road and not particularly attractive car park) usefully softens the glare of this large north light but at the same **time frustrates users who cannot modulate their immediate environment** to suit their own taste. The fact that the area “wasn’t originally designed as a staff space” only serves to highlight the inevitable contradiction that arises between centralised systems and the desire for local control.

The project is noteworthy for its liberal attitude taken towards talking, mobile telephones and food and drink, causing a strong reaction from those who hear of this regime out of context. This ‘laissez faire’ strategy applies first of all to the level 0 / atrium space in the main. What is significant is that when first opened there was deliberately nothing to declare that “social” behaviour was not also allowed in other parts of the building, management relying instead on self-regulation and natural good behaviour. With some exceptions it is considered that the experiment has generally worked well. As it was expressed, hot drinks are “discouraged” above level one where the presence of “shelvers” and “custodians” (assistants who wander the floors ensuring that photocopiers are kept full and the printer pods are kept tidy) are generally sufficient to reinforce natural good behaviour. The whole makes for a lively but totally usable environment which appears not just acceptable but attractive to most students and where “students have ownership of the building and take responsibility for it”. Equally it was admitted, with regard to the lively atmosphere that “if we were going to build a graduate school on this campus we would require a different facility.

A couple of subtle observations on personal behaviour were interesting. Firstly it was observed that there was a correlation between greater liveliness at the front where it was

light, and greater quiet at the back, where light was graded off. And again that “people talk at round tables and not at square tables”, and that, as a result, the round tables had been moved to the livelier front of the “reading rooms”. This correlated with an observation at Loughborough University where it was remarked that large rectangular tables could accommodate more than one group but that round tables tended to be dominated by a single group.



Left: Wayfinding sign from the Saltire Centre ‘landmark’ structures

At a technical level Caledonian’s decision *to accommodate a large amount of their book-stack in movable “compact shelving” has caused a degree of controversy.* This situation seems to have suffered from mis-understanding and initial teething troubles. With regard to breakdowns this is considered to be once again a ‘non-issue’ now, with only a single call-out to the engineer over the past semester. With regard to accessibility however it is admitted that the situation on level 0 is not good, where an overstock of books has left too few gaps, meaning fewer people getting access at any one time. Like many institutions however, the most powerful argument for a compact shelving strategy was the way it could blow the myth about the degree of

access required – what was maintained as necessary by academic staff and what has tended to happen in practice. Against this however it was admitted that the kind of serendipitous access as a result of browsing was definitely inhibited and that paper journals in particular deserved pulling out onto open shelves. The question still asked was at what cost this serendipitous browsing should be provided and whether the space otherwise taken up by book stacks might be put to better purpose.

At an apparently trivial level, but echoing opinions at almost every institution visited, *frustration was expressed with regard to cable management and the inadequacy of floorboxes in particular.* Amazement was expressed by several people that nothing better than floorboxes (which constantly broke, got in the way and were awkward to use) could be suggested by the design team, and that, with the hassle factor of setting up any bank of pc’s, the idea of flexibility (over short time frames) might as well be disregarded. This raised the issue of the growing use of laptops and whether pc use should be space-planned into those areas where flexibility was not called for.

Institution - University of East London

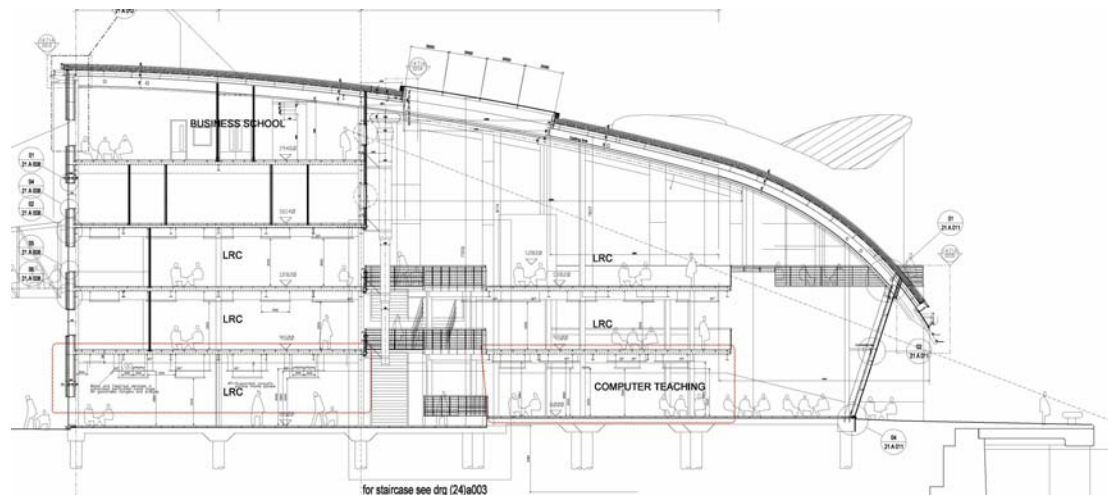
Space – Learning Resource Centre, Business School

Opened - 2006

Respondent – Judith Preece

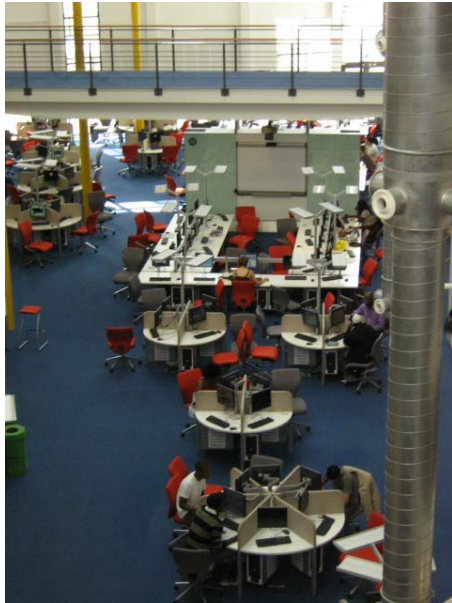
Role – Docklands Library and Learning Centre Manager

UEL's new Docklands Library and Learning Centre has all the drama a new student visiting the University could wish for. It is bright, spacious and futuristic, with nothing of the institutionalism likely to suggest that learning is either hard work or boring. It is open plan in a **big** way with open plan floors linked to an open plan atrium. Besides a 400-seater auditorium space, which backs into the main volume and is separately accessible off the main entrance and the necessary toilets and services areas, the building started life (at the direction of its then chancellor), with few enclosed spaces– and its natural ventilation systems have been designed to suit.



Above: Section through the Learning Resource Centre showing relationship of open balconies

The building comprises approx 5500sq.m.of mainly open-plan space, and it can attract up to 5,000 users a day. It is used by a wide cross section of students from business graduates, to social scientists to architects, and caters for students from diverse backgrounds with variable ability. It is busy, lively and very popular, but to what extent it can cope with the kinds of pressure being put on it, is still to be proved. Some modifications have already been made; others undoubtedly would be taking place if the environmental control system of the building allowed it.



Entered at the ground floor via a relatively small space, a row of access control gates leads almost directly to the field of open access computer clusters known as the “Trading Floor” (a slightly confusing term, given that the building is shared by the Business School, but that this facility does not strictly belong to it; the name nevertheless captures the vibrant, independent and market-oriented ethos of the centre).

Left: View of the “Trading Floor” from balcony level

Two floors with overlooking balconies rise up on either side. To one side (under the balcony of the first floor) are rows of ‘bench’ system desks for group work. To the other are open plan teaching spaces – not just informal groups for seminar discussion, but rows of seats facing a smart board set immediately beside and back to back with similar rows of seats facing fixed and equally spaced smart boards. The

arrangement is new and daring to say the least.

Further up the building on the floors fringed with balconies overlooking the atrium the space is slightly more conventional in so far as there is a mix of book stacks and different types of workstations. Here the space probably works at its best with all the connectivity to the atrium and the Thames outside but with a reasonable amount of internal sub-division to give places to hide within or behind or beside. The “structure” comes in the form of half-height circular ‘pods’ or ‘pens’ as they are called, used either for informal seminars, individual working or specialist functions like a graphics editing suite. The remaining space has either workstations or informal seating. To one side there is a help desk signalling “Skillzone” (learning support) with staff seated in open plan immediately adjacent. The result of the whole is a successful social and group study space. On another floor the library staff are similarly set behind a reception desk in the general open plan. If accessibility and overlap was what was intended then UEL has it in fine measure. Having all or most of the staff in one place is considered excellent, with respect to increased efficiency, communication and quality of services, but this is being balanced on the other hand by a working environment which is proving difficult (see paragraph below), possibly because of the building’s popularity, and certainly more at some times of the day and year than others, but sufficiently to raise questions about the success of its general configuration.

User reaction has been very positive, measured in terms of numbers entering the library, and official feedback, but there have nevertheless been some serious issues. **Noise was reported as being a problem on the ground floor and in those parts of the balcony where workspaces overlooked the atrium.** It was particularly a problem at lunchtime and when students were arriving or leaving the building where the outdoor feel of the place made them think they could freely shout to each other. Thereafter the juxtaposition of the “Trading Floor” with the open plan teaching spaces was proving sufficiently unworkable that although some staff like the buzz of learning, others were wary of using them and that take up is currently slow. It was considered just possible for a tutor to be heard by his or her group of students, but the distraction of what was occurring ‘next door’ or of other students inadvertently wandering through a “class” made concentration difficult, especially for less motivated students. What benefit might have been had from trying to break down the feel of an old style classroom appeared to have been forfeited by the loss of quality in formal teaching. There was a particular irony in this in that technology (in the form of smart boards), far from liberating the teaching / learning process had frozen the traditional talk and chalk relationship by creating fixtures usable only in a classroom mode, albeit with seductive “bells and whistles”. On the plus side the openness of these classrooms makes them popular as an open access facility outside of timetabled teaching hours.

A much more successful arrangement was found for Adam Smith College in Kirkcaldy where the same notion of 'open plan' classrooms was combined with glass partition walls, a careful corridor system which avoided students ever having to walk through another classroom space and where the juxtaposition of other types of teaching space allowed rapid switching from one kind of teaching more to another. What the UEL 'classroom' experiment usefully illustrated however was the essential difference in space use terms of traditional didactic teaching and modern seminar teaching and group learning, which, besides being effective in a pedagogical sense, were also much better suited to open plan.

The extreme open plan of UEL was also proving of ***mixed success with regard to temperature control***. The open plan of the building, including the atrium, is fundamental to the pattern of air movement and for the ventilation system to work properly it is necessary in addition to open windows at ground level. Because of problems with security this latter requirement was not happening and, while some places were pleasant enough to work in, others were proving too hot, even on relatively mild days, and others again stuffy or draughty. ***The reaction to this and to the problem of noise had been to start to enclose some spaces but, if anything, this was exacerbating the situation***. A solution being considered was to remove the classroom functions to buildings better suited to this type of operation, a logical enough step, but highlighting all the same the effect of a building arrangement dependent on a centrally operated, uniformly managed environmental control system. An interesting comparison with UEL is Caledonian University's Saltire Centre which, while it appears to work on the principle of one large atrium space, is nevertheless separated into floors and thereafter zoned from noisy to quiet.



Left: Ground floor circulation space used for social learning

UEL illustrates various other interesting experiments in new types of learning. Like several other institutions it offers 24-hour access, which has proved popular with students. Being fully open plan it is however difficult to zone, and this means that more of the building has to be lit and patrolled than is strictly necessary. This philosophy of accessibility is combined with a liberal approach to drinking, if not eating, with the latter being found very difficult to control. A comparison here with Loughborough is interesting. At UEL facilities management (and therefore cleaning) is organised on a campus wide basis, making it difficult to provide individual building solutions. This contrasts with Loughborough where the food and drink situation could be successfully managed rather than unsuccessfully prevented. UEL

library staff would prefer to have more control over the area, but as it is not solely a library building this is not possible at the moment.

There was also an interesting comparison with the number of library staff available to run the building (16 daytime staff FTEs for 8,000 students on campus– compared with 150 for 12,000 students cited elsewhere), suggesting that an economy coming out of the adoption of open plan had been sought, where the emphasis on self-directed learning called if anything for an

increase in on-the-spot student support. As a consequence, they are now investing in new technology to enhance an increasing self-service culture.

The building is more heavily used than found in most places. While architects and graphics students had their own studio facilities elsewhere they were successfully colonising part of the Library in addition, and using it as a place for putting together project work. This meant even more lively 'group work' than other students, heavy use of photocopiers and printers and the misuse of work surfaces designed purely for study which, even after a brief year, were scored with cuts and sticky glue. While the Library management were rapidly stepping back from a policy of no signs and minimal policing, ***this type of free for all access and usage was proving difficult to control***, and management are seeking new ways of both responding to the legitimate demands of AVA students whilst also maintaining control of the workspace.

Very successful however, had been the transition to the new building where radical changes in operation may have been expected to draw a negative response from staff. Here, thanks to considerable time and effort put into consultative groups and working parties, not only had there been a positive response to the move, but two different organisations with two rather different cultures had been successfully merged together, possibly because of the excitement of the new building and the new project.

Overall the building provides a wide range of learning spaces for a diverse community. To do this within a single building while maintaining a sense of accessibility and connectivity is not easy. The University has taken some risks in so doing and is to be congratulated on achieving a noteworthy building. It will be very interesting to see how it matures in the years to come.