

# **Audio Visual Centres in the 21st century**

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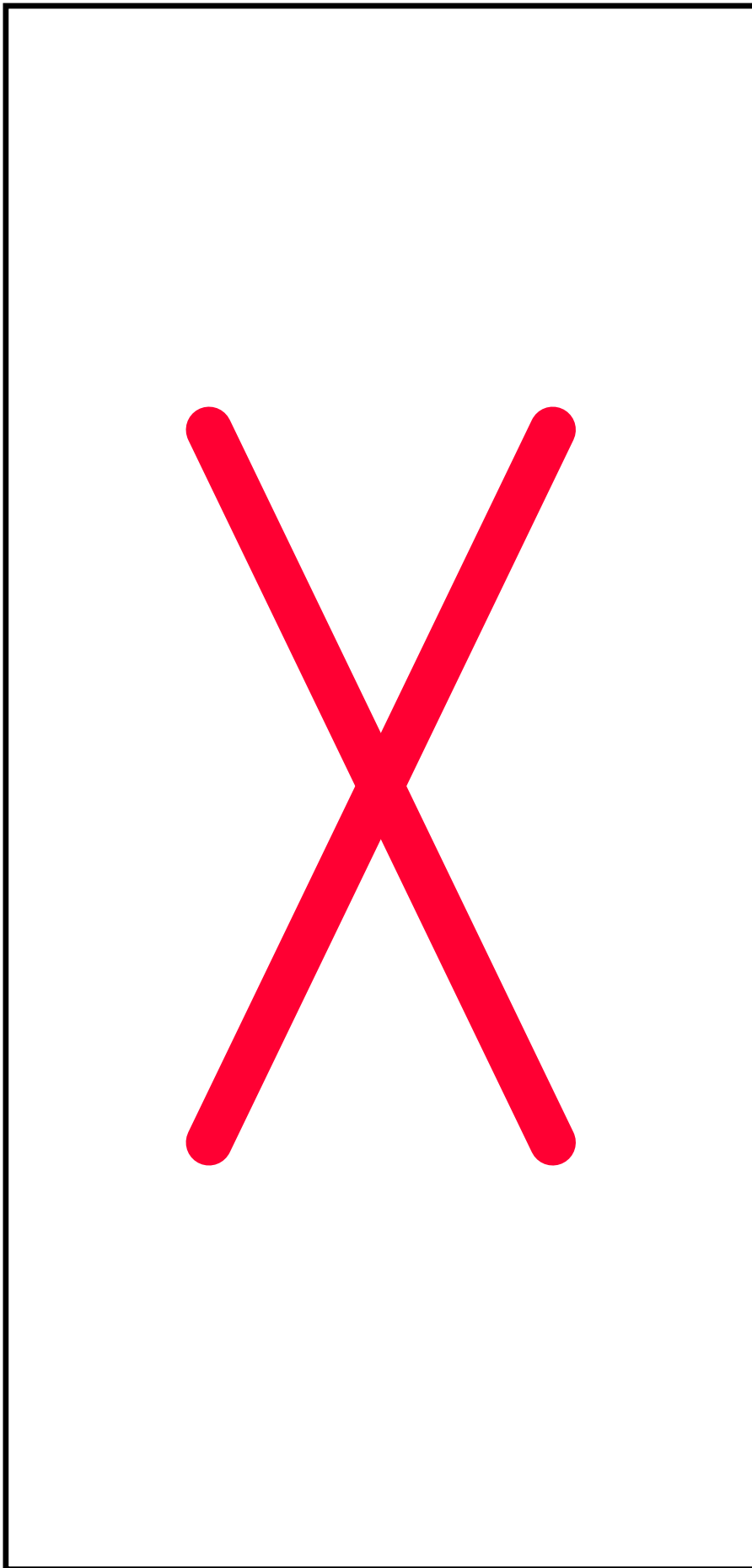
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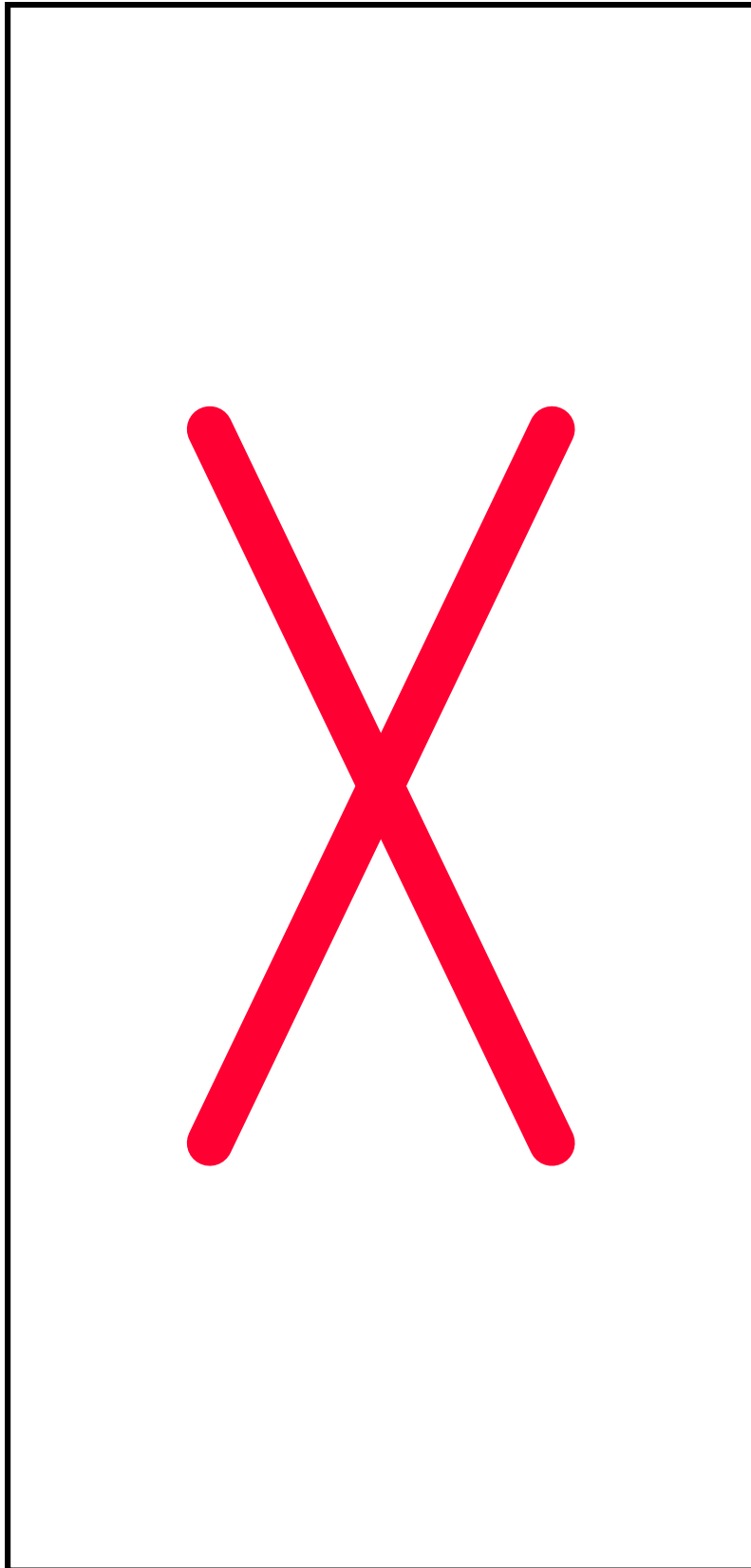
# 1 Introduction

- 1.1 The world in which we live is changing rapidly and that is equally true of Higher education, and in particular applies to Media Services. In the following paper, I will attempt to outline my vision of the future together with topics on best practice and futureproofing.
- 1.2 Do not expect to see any flights of fancy in the following paper which the title may suggest, what it does address are basic problems which should have been embraced by most institutions at least ten years ago. I have deliberately tried to avoid fanciful ideas and tried to assess what can realistically be achieved set against a background of diminishing resources. There are some suggestions that are far reaching and appear to be unattainable but I am committed to driving the service forward very often against stiff opposition. Old Universities in particular must respond more readily to shifts in demand and perhaps new teaching methodologies will provide the catalyst. Above all we must have 'a can do attitude' at all levels within the institution.
- 1.3 The old days of a college / university having an isolated AV department, in my view, are long gone!
- 1.4 Developing a professional body of Media support staff is an essential requirement if we are to keep abreast of new technologies and teaching methodologies, I hope this paper will promote debate and help to stimulate change.
- 1.5 To note that some thoughts expressed here echo views already published in other AGOCG papers and are reiterated to add weight to the arguments and support those views. The 'one stop shop' being a typical example and has been one of my objectives for many years.
- 1.6 If this document forms part of a foundation on which others can build upon in the years ahead and leads on to a UK standard for lecture theatres and service provision it will have been a useful undertaking .

## Queen Mary & Westfield College.

- 1.7 Queen Mary & Westfield College has a large campus spread over sixteen acres and has about 8,200 students with 719 teaching staff. There are 120 classrooms and large lecture theatres plus smaller seminar rooms. We are one of the largest schools in the University of London and it continues to expand both academically and geographically. MSU was only established in 1990 and could still be considered a fledgling compared to others. There are seven staff which is set to increase but physically the group is separated by the geography of the campus and a lack of a central studio complex. Again, this is set to change and our recent review has promoted change. To support the work of the academic community, MSU has two industrial commercial photographers, three AV technicians and a temporary agency technician. Administration comprises a manager and an administrator/ PA.
- 1.8 The AV centre is well equipped with the latest portable video/data LCD projectors and permanent CRTs. It has a large cache of conventional AV kit together with portable high band SP Umatic EFP kit and lighting plus two additional DXC video cameras and a three machine edit suite. Off air recording systems enable both video and audio to be recorded. The AV centre regularly supports internal and external conferences alongside its normal role. The largest venue on site being of 800 seat capacity and is the former Peoples Palace in Mile End. It has one of the largest stages in London with all of the features associated with a commercial theatre. Conferences are regularly held here and AV staff are often requested to record these events on video. Recently live video relay was needed into adjacent theatres due to the extremely large number of delegates. The installation of the video links were undertaken entirely in house as was the subsequent video production.





- 1.9 In the past the AV centre has undertaken some commercial video productions for pharmaceutical companies. When we were connected to Livenet, the University of London's video conferencing system, satellite broadcasting was transmitted to partners in Italy on the experimental Olympus satellite. This work was by necessity limited due to the failure of the satellite and has now been discarded since our fibre connections have been disconnected due to cost. However, valuable experience was gained in video conferencing and hopefully this will be re established at some future date when new technology will reduce overall costs to a manageable level.
- 1.10 I feel that we are at a crossroads, here at least, we have moved into the twentieth century, but with the twenty first century just around the corner I am anxious that we move and embrace new technologies before the next century begins and we are stranded in the past with little hope of catching the rest of the field.
- 1.11 It is essential that Media Service Units receive the recognition they deserve and are represented at the highest level within an institution. The service we provide enables the institution to present its work to the outside world, a professional image is vital. This cannot be achieved while institutions see the sharp end of teaching as the poor relation. The image we present to students has to stimulate learning and of course we need them to recommend their younger counterparts to come to our colleges.
- 1.12 If we do not continually update teaching technologies and improve the environment in which this takes place students will not readily absorb what is being taught. If we continue to fall short of their expectations they will not recommend us to others. In the present environment each institution is competing for student business therefore we must be able to provide a service which represents value for money.
- 1.13 We must not forget that students are now fee paying customers and they will demand a better standard.
- 1.14 It is my view that we should seek to establish an ISO standard for the teaching environment. If this could be achieved, students would at least recognise that the institution to which they were applying had a minimum expected standard. This could be augmented with a star rating scheme that would further define the standard on offer (see 'An ISO standard'). Academic excellence on its own is no longer good enough.
- 1.15 Most colleges have not developed Media Service groups or invested sufficient funds in equipment, staff or infrastructure to keep up to date with new technologies. This needs to change and very quickly if we are to take advantage of new teaching methodologies which will be expected by a new generation of academic staff and students.
- 1.16 Problems will surface as more reliance is placed on new technologies and will be highlighted when academic staff move between institutions. When trying to present data they will find projectors that are incompatible with modern laptops or the interfaces will be non standard or they will not be networked. This will lead to frustration and staff will increasingly be deterred from using new methods. Remember the days before multistandard VCRs were readily and cheaply available and the difficulties that ensued when you wanted to show an NTSC tape, do we really want to return to those chaotic times. No of course not and we must strive to standardise our equipment base now. There are pockets of excellence of course but by far and large services develop very slowly and has no grand plan which everyone should be following in order that presentation platforms have a synergy from the start.
- 1.17 What can we do to redress the balance, first we must have a vision of what is possible now and in the future. This of course has to be set against a background of diminishing resource. However it is my belief that Media Service Units will be given a larger share of the cake as the importance of its work is recognised. This recognition will surface when academic staff have to



spend an inordinate amount of time mastering unfamiliar presentation software packages, none more so than in the field of multimedia.

- 1.18 Academic staff already rely heavily on self access systems to create hard copy photographs, slides and posters via the network. This has eased the burden on the service centres and transferred it to academic staff. This is fine as far as it goes but if we are not careful it will start to waste valuable academic time on non essential activities and is clearly not cost effective if taken too far. Greater reliance will be placed on networked systems technology but the centres will have to increasingly take on the more sophisticated production elements. This will demand that we employ qualified specialist staff to maximise the features within the software. It is only by using software on a daily basis that the full potential will be realised and that can only come from full time specialists.
- 1.19 Media Service Units are progressively changing their function and will increasingly encompass all types of media to become communications centres. This is already happening here at QMW where we have recently joined the Academic Information Services group. It now comprises Library, Computer Services and Media Services and is the foundation for the 'one stop shop' scenario mentioned in a previous AGOCG paper by others. This opens up a whole new stage on which we can build the communications centre.
- 1.20 A change of name will become essential to identify our new role. I envisage that a generic term will evolve but as a start I would suggest that there are several possibilities that would be appropriate, e.g., Department of Media Communications, Department of Learning Resources or Department of Media and Teaching Resources, spring to mind, it describes more precisely the service we are now providing.
- 1.21 How can we optimise the resources we already have. Lectures are a valuable resource and normally lost until presented again. This practice is wasteful in the extreme and deprives students of valuable revision material. In future, I envisage that lectures will be automatically recorded and held in library archives. Most institutions have Open University and ERA video libraries and these should be augmented with recordings of lectures both audio and or video. In addition these collections can be further enhanced by archiving multimedia disks designed for specific courses. Of course this would be a massive undertaking and impractical to achieve over one academic year. Since lectures are normally repeated in subsequent years these can be timetabled and slotted in as appropriate to gradually build the holding. Specific theatres should be set up for the purpose which would save set up time and make for a reliable system. Cameras would be remotely controlled from the lecturers' position by touch screen. All seat positions will have a location on the control screen, once a position was touched the camera/s would zoom into that seat/s and a student or delegate asking questions could be shown on screen inset into the main image. Microphones could be voice activated and overridden by the lecturer. Codecs would allow interaction directly onto the presented images by active wands or via laptops enabling fully interactive lectures to become a reality.
- 1.22 I envisage that all students will eventually have laptops and regularly work from their rooms/halls.
- 1.23 Software will have to be compatible and colleges must advise students what computers and software to obtain before attending their first year.
- 1.24 Theatres will have special handsets that would enable interaction to specific questions and even examinations and marking could be set using this technology. The technology exists now to enable this creative leap, which I believe will become common place within five years. In the future all images will be electronically generated, slides will be a thing of the past and about as exciting to use as an epidiascope! We all know the arguments for not going fully digital but technology will become more reliable and offers a flexible teaching/learning platform that can never be equalled by existing projected images.
- 1.25 Universities are one of the largest users of AV presentations in the UK, we can establish standards and make a difference to training, teaching and design.

## 2 What Will the New Centres Look Like! (proposed structure MSU 2010).

- 2.1 Despite what we are told, new technology will and does absorb an inordinate amount of time and effort. This will be highlighted when multimedia programmes need to be compiled from scratch. Generally Academic Staff will not have the time or expertise to design and compile the wide range of disparate resource materials required for these programmes. They may consider that they should be able to achieve a reasonable result but at what cost in terms of the time spent trying to learn Director or the any of the other authoring software that is available. Combine this with an overriding need to have a coherent and well structured product, leads me to believe that the amateur route will fail. Generally Academic Staff do not have the necessary skills to produce even a TV programme, multimedia is no exception, and it is more complex due to multipathway considerations within its structure. Any multimedia programme must be on a par with commercially available material, if not, it will fail. Clients and students will expect our educational software to be among the best, we cannot afford to be sub standard. Far better to leave it to specialists with academic staff having an editorial role so that they can keep the project within specific guidelines.
- 2.2 Major developments in the field of continuing education are well underway in the UK with a green paper having been published recently. Heavy emphasis is given to working with the immediate community surrounding our Universities. Distance learning will, I feel, play a large part in targeting the unemployed and ethnic minorities and other educationally disadvantaged groups. Home delivered learning could play a vital role in the regeneration of East London.
- 2.3 With this in mind, we will be exploring the possibilities of working with the local cable provider to produce home delivered training packages. This is only at the very earliest stages of discussion but I feel sufficiently optimistic to include it here as encouragement to others.
- 2.4 The structure envisaged (see below) is a broad brush view of the concept but it embodies the vital elements that would be required to deliver the new services. Not all of these posts will necessarily be college appointments with many services being sub contracted, but suffice to say that a substantial investment in the infrastructure will be essential to ensure success.

### 2.5 Learning Resources.

This will be a new section within MSU that will coordinate all other elements of MSU's activity and hence will perform a pivotal role in the new unit. Its main function will be production of multimedia programmes and other teaching resource materials. It will be led by a learning resources officer, LRO.

### 2.6 Audio Visual & Video Production.

This section will undertake all day to day duties related to teaching and external conferences. In addition, it will undertake video production under the direction of the Learning Resources Officer. AV technicians will be seconded to departments and Faculties and act as representatives for MSU. They will be in a prime position to promote new services and products as they become available. It will become more production orientated as multimedia grows which will require a constant feed of video images.

### 2.7 Photography and Digital Imaging.

There will be closer working relationships forged between AV and Photography and will become more apparent as technology develops. This will mostly revolve around digital images and transfer of analogue taped images being transferred to slide or OHP materials. AV technicians will be constantly updated as new services are introduced so that they can advise departments as described above.

## **2.8 Presentation Skills.**

These courses will utilise most sections of MSU, requests for service will be directed through the LRO for developing the course into stimulating multimedia presentations together with traditional visuals.(see section 22)

## **2.9 Electronic servicing.**

MSU spends a significant amount of its budget on spares and repairs to its increasingly complicated equipment cache. To improve the service we provide, it is essential that an in house service is provided to keep equipment in top condition. Fast turn round of broken equipment is vital as reserves are limited, especially data projectors and computer equipment.

2.10 This service, although primarily to support MSU, should also provide support to the entire college. This would cover all computer and peripherals together with research equipment repairs. It could also be developed into a prototyping section that would also underpin the electronics requirements of academic departments.

## 3 Photographic and Lecture Theatre Services Self Access Systems.

- 3.1 It is essential that all the services on offer are a cost effective use of staff time, and maximises accessibility and flexibility for users. At QMW we have used technology to solve increasing demands, rather than put an extra burden on the recurrent budget e.g., staff costs.
- 3.2 The photographic section of MSU has the equipment and skills to undertake any assignment from scientific applications e.g. high speed cinematography to industrial and commercial work. When the group moves to its new studios in the near future it is intended that commercial activities will be a high priority. This will support the internal service at minimal cost. I do not support full cost recovery on internal services, it is wholly unrealistic. We have invested heavily in networked photographic services which comprises scanners, slide writers and dye sub printer. This is going to be augmented shortly with an AO poster printer. These automated services save an inordinate amount of time compared with conventional photographic techniques. This is not to say that conventional silver technology should be abandoned, more that there is a place for both.
- 3.3 At the moment digital cameras are very expensive and are not sufficiently well developed for our use, resolution being very poor compared to silver based systems, consequently full digital transfer is some years away. I consider that computer technology enhances our work and at the moment is an additional tool and not a replacement for conventional photography which is an extremely cost effective medium.
- 3.4 It is important however, to use digital imaging where and when appropriate and electronic cameras will play an increasingly important role in the future.
- 3.5 It is vital that full digital integration takes place but not at the expense of quality and we will not use technology just for the sake of it. We must provide a quality product and there must be time and/or cost advantages before purchase is sanctioned.

### 3.6 Self access.

Self access is the key to reducing overheads and making AV more accessible to users. This applies not only to the small video replay rigs and projection equipment outlined above, but here we have also moved to achieve similar levels of self access for large lecture theatres that have projection boxes (see photograph P5). This is particularly easy in recently refurbished rooms and in particular where AMX control is available.

### 3.7 How have we achieved self access.

Self access will always need some technical support but this is reduced to the absolute minimum. It is usually restricted to the start of the lecture and is normally limited to ensure the systems are working. Once satisfied all is well, the technician leaves for the next job. Time on the job, less than five minutes.

- 3.8 The remainder of the lecture is then controlled from the lectern.
- 3.9 Regular users are 'trusted' to operate the theatre independently after they become confident with its operating procedures; not that it is particularly difficult but some people need to be reassured. This is self access at its best and further reduces demand on support staff. To achieve this AV staff must have a good rapport with teaching staff and a good training programme. This may be formalised at some point but at the moment it is 'on the job training' and works well; the advantage of the latter is that it does not take an inordinate amount of time and it is one to one training.
- 3.10 Security problems are overcome by obtaining a signature from the user on a liability/loan form. Any loss or damage having to be reimbursed by the offending department. This form applies to

all loaned equipment and applies equally to a lecture theatre. Making teaching staff responsible for equipment in their care has been very successful. Since its introduction four years ago, equipment theft has ceased. Equipment will not be delivered unless someone responsible is in attendance to receive and sign for it. After the lecture they must either remain with the equipment until its collected or take it with them for safe keeping. In the case of lecture theatres they must close the system down and ensure the projection box is locked and of course return the key to the AV centre.

3.11 I can report that academic staff are extremely cooperative and the system works well.

## 4 Interactive Lectures.

- 4.1 Technologies are already available that can auto track a students progress and fully interactive lectures will become the norm. Based on this technology I envisage examinations using this to advantage. Some Medical institutions have already invested in this equipment and clearly demonstrates that there is already a move to stimulate learning and automate examinations. In addition results will be held in its database so that accreditation will be a much simplified process. Students understanding will be constantly monitored and weak areas can be noted more readily.
- 4.2 Of course all of these teaching innovations will require a new methodology to support the technology. It will require a change of direction in terms of academic planning and lectures will need to be carefully structured to maximise the benefits that interactive systems bring to teaching. A significant amount of academic time will have to be invested initially but the gains in real terms will be tremendous. The technology uses infra-red transmission for microphone sound and data but can be hard wired if necessary. In addition students may answer multiple choice questions via the hand set which can be used anywhere, even at home the results being downloaded into the computer the next day for analysis and marking automatically. A strict security regime would be a prerequisite and would need to be addressed by the institution before committing to such a system.
- 4.3 We must plan for the new millennium and develop support services as never before. To date institutions have been lead by the 'old school' but as new academic staff with IT skills become established in senior posts, change is inevitable . We are already seeing these shifts in emphasis and academic staff will quite rightly expect increased support . Likewise fee paying students will demand better services and will shun colleges that fall short of expectations.
- 4.4 The new units will have to be proactive, and continually develop the service in response to demand. More importantly spotting trends and developing technologies before they are required are a prerequisite. It will often be years before it is practical to implement some ideas but it must be stressed that a long term planning strategy is a key element to the success of the new emerging support services. A strategy that dovetails precisely with the institution's information strategy and mission statement are essential in establishing good practice.
- 4.5 That is not to say that one has to have a plan cast in stone or even have it fully documented but thoughts and notes are just as valuable and a vision of what can be achieved is always useful to have to hand however outrageous they may seem at the time. These views may not always become a reality in exactly the way envisaged but elements can trigger the creative mind and develop thoughts that stimulate ideas as technology advances.
- 4.6 Who would have thought even ten years ago that we would have been so reliant on self access printers, slide writers hanging on networks and computers that could manipulate images so rapidly. Interactive live video relayed lectures are being considered from laboratories to classrooms for large practical sessions and will be in place next academic year.
- 4.7 Technology can also help when students numbers decline which I am confident will happen as the economy improves and jobs are more plentiful. This combined with increasing costs to the student is going to have a significant effect on HE income.
- "We are already seeing applications down by 6% or 21,000 students. This is the first time numbers have fallen at this stage since 1994",(source UCAS).*
- 4.8 What should we do to prepare for such an eventuality. I believe we should be looking towards Interactive Distance Learning that may bridge the gap and this is particularly easy where local commercial cable networks are fully activated. We should actively explore these avenues as either a fall back position or to augment existing student business.

- 4.9 It is also envisaged that the new communication centres will have to actively market their production in support of the internal services.
- 4.10 This will include marketing internally produced multimedia and video programmes. These would be specially commissioned works for internal consumption but could be equally tailored for sale to other institutions or to individuals wishing to take a specific course. Support materials would be required for the latter and may not be cost effective for individual students.

## 5 Lecture Theatres: Prototype and Standardised Systems.

- 5.1 To date we have identified the type of facility needed which the academic staff are happy to use. It is no use at all installing systems that no one wants. A gradual introduction to technology based teaching is proving to be the optimum method of bringing new technology to the forefront in teaching. It must be stressed that a user group was not the route used. I felt that to take this through such a tedious process would not have been very productive and the result less than desirable.
- 5.2 What we did do was to undertake a survey (See appendix seven) of users and ask them what they liked/disliked about the existing service and how they would like to see it improved. The returns were very illuminating and helped to focus attention on specific areas.
- 5.3 The survey helped to shape the new theatre based on this feed back. To progress this to a satisfactory conclusion required a suitable space. A proposal was already in hand to refurbish a medium sized lecture theatre of ninety seat capacity. This proved to be ideal for the prototype. Our AV technicians undertook the entire AV installation with exception of the writing surfaces. In conjunction with the projects office a design was established which is now a benchmark for all subsequent theatres.
- 5.4 The specification had to include writing surfaces/OHPs and screens, 35 mm projection together with Video data projection and dimmable lighting. All of these systems had to be controllable from the lectern.
- 5.5 It was quickly established that there were two main players in lecture theatre control systems Crestron and AMX both being USA imports and with a very strong reputation in the field.
- 5.6 We opted for Crestron so that an objective comparison could be made against the AMX system already installed elsewhere on campus.
- 5.7 Architectural design was provided in house by our projects office and they were able to provide expert advice for cable runs and trunking types and how we could future proof the system within the limitations of the budget. This has proved to be an ideal team and produced a fine result at modest cost which academic staff enjoy using.



## 6 Lecture Theatre Design/Teaching Block.

- 6.1 What is the ideal design for a lecture theatre and how would you service such a facility? I was asked for my views at the very early stages of a design concept for a new lecture theatre complex. It transpired that it would be no more than a refurbishment of an existing building which precluded many original and innovative ideas. Non the less some of the more critical details have been embodied in the final design which has enabled a high degree of futureproofing as outlined elsewhere. The design shown for a 'teaching block' (see appendix one) dates from 1994 and was a preliminary idea that was not developed any further: I believe it was a useful exercise and is a cost effective solution and modern concept that could be developed to provide a self contained teaching facility.
- 6.2 An overview of the AV design concept is also shown in appendix two. Many of the features described have been lost due to cuts in budgets or building constraints but the core services including AMX remain intact and can be upgraded when required. The final design is a fairly conventional layout as is the lectern which has been modified to accept video tapes via the letter box. It prevents tampering with the VCRs controls whilst allowing free access when needed. (see appendix three and three A)

## 7 An ISO Standard for Lecture Rooms.

- 7.1 Lecture theatres even within institutions are often dissimilar and should be a matter of concern. It disrupts a teacher's thought processes if they are confronted by overwhelming or variable technology. This is exacerbated when a lecturer visits another college and is confronted by yet further variations in its presentation systems. As technology becomes increasingly more sophisticated it is essential that these anomalies are removed.
- 7.2 Institutions should aim to standardise their teaching environment and develop a rolling programme of upgrades that would conform to a statutory UK minimum standard.
- 7.3 The CVCP should consider establishing minimum standards that are embodied in the TQA for every institution. If a standard was established, not only would it help teaching standards improve but significant savings could be made via the purchasing consortia throughout the UK which would benefit every institution.
- 7.4 TQAs assess the teaching standards of the institution but what is being done in real term to address the quality of the teaching environment. Great play is made about the need to use new technology to support teaching but no mechanism exists that helps us to implement change or guide us in any particular direction.
- 7.5 Video conferencing will become more important as will interactive lectures and multimedia presentations, but unless there is commonality between institutions, new technologies will be stifled and remain on the wish list. Lecturers should be able to travel between institutions and expect to find video/data projectors etc., that will function as readily as the present slide projectors. But how many institutions have sufficient VDPs to support more than a handful of lectures using this technology? Before long we will be into a runaway situation that cannot cope with the demand.
- 7.6 To redress the balance we must have a standard to work towards.
- 7.7 To this end, I propose that UK universities formulate a blueprint that will define the specific requirements of lecture space and devise a mechanism that ensures compliance by each institution.
- 7.8 Within the specification a grading scheme should also be included which could be awarded during a TQA. This could take the form of a star rating or some other recognisable symbol of excellence. Specifications may have to be updated regularly to take account of advancing technology.
- 7.9 The specification must identify the minimum requirements for a given size.
- 7.10 Equipment requirements can be specified in broad terms. Recommendations for video data projectors must specify a minimum refresh rate.
- 7.11 Guidance notes must be provided, along with a specimen layout design schematic for typical types/sizes of theatre/classroom. Screen size/projection distance tables and other useful data could also be included.
- 7.12 In other words a hand book giving all the basic parameters that have to be considered and included in any design concept.
- 7.13 Reference must be included regarding purchasing consortia criteria and lists of approved suppliers. Perhaps it would be appropriate for AGOCG and CVCP/ London Universities Purchasing Consortium (LUPC) to have a joint initiative which would establish such a standard. Universities that subscribe to the LUPC purchasing consortia need to be consulted and their views considered.

## 8 Design Consultants for the University Sector.

- 8.1 If a UK standard was eventually secured for lecture theatres then it would seem logical to have the same design team for the entire University sector. This could take two forms: i) employ our own architects for the UK in house (where ever that may be!) ii) employ a contractor to supply the service required and would be appointed via University purchasing consortia. Agreement between the numerous consortia groups would be essential.
- 8.2 The latter would offer greater continuity and expertise than could be achieved 'in house'. To employ our own staff would not be cost effective for a UK initiative. Location, management politics and funding would also be problematic to name but a few.
- 8.3 Individual tendering would not be necessary under the terms of procurement practice as this would have been undertaken by the purchasing consortium thus saving time and effort for each institution. AV design would always be central to the design concept. AV consultants and or Media Services units would be involved in the project from the outset.
- 8.4 New contracts would be re negotiated every three years, or sooner, if problems arose. Specifications would be upgraded to suit changing technologies. AV consultancy services could be provided for institutions that did not have the expertise in house. In any case the services of the preferred AV supplier/installer must be employed by the appointed architects. To note, that at present, institutions are not compelled to use CVCP or LUPC preferred suppliers. To ensure success of the purchasing consortia, CVCP must enforce financial regulations to make institutions buy from appointed suppliers at all times.
- 8.5 These are only first thoughts but the concept is essential if UK universities are to provide a stable , interchangeable and flexible teaching environment which uses new and developing technologies to its advantage.
- 8.6 If change does not take place, and soon, teaching staff will be dogged by dissimilar presentation technologies for the foreseeable future.
- 8.7 If we succeed, the rest of the world will follow - or will they? A world wide standard, now there's a thought.

## 9 Refurbishments:-should AV design take priority over building design?

- 9.1 A general consensus seems to prevail in the AV industry that AV equipment is of secondary importance to the lecture theatre itself, the building design taking priority. Frequently equipment is ordered near the end of the building project, the result being a poor compromise. It has to be recognised that the theatre is just a room in which to house students, lecturer and AV equipment.
- 9.2 This practice must stop and is clearly detrimental and not in the best interests of the institution. Clearly the AV design is of prime importance as it is a tool for teaching and it must have the highest priority. An integrated design is the best option but often overlooked. It is essential to have AV consultants on board from the start.
- 9.3 Of course the building housing lecture theatres is important and of course one must feel comfortable in the surroundings but that is all, the environment is of secondary importance to the real job in hand which is teaching and learning.
- 9.4 If the latter is true why is the AV component normally an appendage to the overall design and why do the AV budgets never quite stretch far enough.
- 9.5 I suspect that at the end of the day it is normally due to poor representation at the appropriate level and will continue to be a problem for Media Service Units until it is addressed.
- 9.6 Time after time I hear stories of AV companies being called to a university only after the design concepts have been finalised. They then have to shoe horn the equipment into a space which is often inadequate for the task.
- 9.7 Points to consider:-
- 1) How is the space going to be used.
  - 2) What level of AV support can the institution afford. This is an overriding factor which cannot be ignored and as an example of best practice the provisional AV budget should be determined long before the architects are appointed. Always add a contingency factor to allow for :-
    - a) Time lag between design and installation.
    - b) Prices increases which may be in the pipe line.
    - c) Developments in technology / upgrades.
- 9.8 Additional factors although not exhaustive must also be considered before appointing architects.
- 1) Set the parameters for the ideal AV system in broad terms within the limitations of the proposed budget and space available.
  - 2) Set the technical parameters which you will not relinquish e.g. large projection screens. Provision for dual video data projection is as crucial as 35mm dual projection and must be included where practicable. Dual 35mm projection should be standard in larger rooms and theatres. Multiple projection is used occasionally and projectors should be capable of being linked to other projectors of the same type with appropriate control systems, all must be dual lamp versions. OHP screens single or twin.
  - 3) Type of writing surface green glass / white steel or vitreous enamel.
  - 4) Writing boards mounting; fixed or counter balanced columns.

- 5) Sound systems: PA, Film / Video.
  - 6) Projection box and its associated equipment.
  - 7) Large projection windows are essential. (*see appendix four for specification sheets*)
- 9.9 Below are some factors which are essential design criteria required by the architects and AV consultants if they are to produce a first class design that works.
- 1) Never allow architects to appoint their own AV consultants, it is an expensive option as they will inevitably add a handling charge and equipment will be very expensive.
  - 2) Preferred suppliers should always be contacted in the first instance. The price advantage is usually more attractive and removes the tedium of the tendering process as this has been undertaken by the consortia on behalf of all institutions or subscribers.
  - 3) It is essential to obtain two additional quotations based on the same specification as a safeguard. If there are discrepancies that do not appear to favour the approved supplier this should always be referred back to your local purchasing officer for investigation.

## 10 Future Proofing.

- 10.1 This has to be a critical design point in any theatre being built or refurbished. The only certain way this can be done is to install trunking only, as no one can be certain of future requirements. It would be foolish to invest in cable systems that may be redundant by the time they are needed. They may also be damaged by other works in future which are unrelated to AV services. In addition copper cables can degrade with time due to moisture ingress. It is not unknown for mice to damage cables.

The cost of fault finding and making repairs would outweigh the cost of installing new cables in an established carrier system when needed. Apart from this, what can we do to cut future costs and generally make cable installation more efficient and of course cost effective. I believe the only sensible way forward is to only install carrier systems so that it is simple and cheap to upgrade when required. Since the greatest cost is installing the carrier system this must be a priority not the cables within.

- 10.2 All carriers should either be three part trunking or large cross section individual conduits which would enable the AV and data cables to be separated from any power sources. Metal carriers are better than plastic as it acts as an additional screen.
- 10.3 It is essential to have your own pre-prepared specifications to present to the Architects otherwise a less than ideal system will be the result, but there will always be a compromise at the design stage which may have to be tolerated.
- 10.4 As an example of best practice, draw wires must be left in the trunking by the contractor. Any subsequent work carried out must specify that draw wires are always left in place for future use. It saves considerable time and money at a later date. It is surprising how often this small but key point is overlooked. AV staff should be made responsible for checking any such installation as it is in their interests to make fault finding easier at a later date.
- 10.5 Always install carrier systems that are far larger than required to allow for additional cable bundles at a later date. Where possible three inch cross section per channel is installed but is not always practical and the limitations imposed by building works have to be considered. In any case installing the largest possible seems to be the key for protecting your investment.
- 10.6 Any carrier design should enable AV staff to install cables with minimal effort and is especially important when re-cabling or rigging for special events. This reduces reliance on expensive contractors.
- 10.7 Essentially all runs need to be as straight as possible. Access points to be provided at junctions or any point where there is a change of direction.
- 10.8 Stage / floor boxes must be deep enough to take all types of plugs / cables and the lid to remain closed whilst being used. We have suffered from contractors installing shallow boxes that will not close when plugs are in place.
- 10.9 Technical staff who are responsible for AV must be consulted as they are aware of the difficulties that are faced on a day to day basis. Often they can highlight problems that may otherwise be missed and highlight impractical proposals by others. It is cheaper than trying to rectify problems later, and has proved invaluable at QMW. The spin off in terms of higher staff morale and promoting team working is also invaluable.
- 10.10 Multiway fibre can be installed and here there is a cost advantage, always provide extra dark fibres in addition to those immediate needs as the extra cost for additional fibres within the cable is minimal compared to the overall labour costs for additional work at a later date. This is particularly important with building links.

- 10.11 Other ways of future proofing are limited as technology is moving so rapidly. One idea that was developed in response to our demand for future proofing and to make future installations as easy and cheap as possible was to make all decorative wall panels removable. New cables and trunking can be installed very quickly; simply lift off the panel install the cables and slip it back into place.
- 10.12 With new technology, it is essential that AV kit is controlled effectively. To that end we have found AMX to be the best system for the task. It can accommodate new AV kit simply by reprogramming. It is easily repaired by swapping boards and another good reason to standardise, as boards from another theatre can be used in an emergency. It effectively hides the presentation technology from the user and presents a user friendly interface which is easily understood. This criteria applies equally to PA systems and other AV equipment that can be swapped entirely or cannibalised in emergency situations.

## 11 Mobile AV Equipment.

- 11.1 This has been a difficult problem to resolve on such a large site (16 acres and some 30 departments), not least due to security of the equipment when left unattended. The other limiting factor as always is financial limitations. The cost of self access equipment has to be balanced against efficiency of the AV staff. Overall mobile equipment has proved to be a cost effective investment. The video rigs that have been installed are extremely useful and has released AV staff for other tasks. We have taken on more bookings this year as a result, and we are able to support teaching more effectively within our limited budgets. The aim of course is to stop using skilled staff as porters and make it easier for teaching staff to have easier and instant access to AV equipment on demand.
- 11.2 On the basis of experience to date I will spend a significant proportion of our next years allocated budget on mobile systems.
- 11.3 Video replay systems have been installed in lecture rooms where they are used most frequently. Depending upon the geography of buildings it is possible to have one mobile video reply rig allocated to a block of rooms. This is a very cost effective solution but clashes can occur if room bookings are not aware of video requirements, but it seems to work well in practice.
- 11.4 They are virtually thief proof and have withstood several attempts by opportunist thieves. The TV monitors are secured to Unicol stands and the video players are bolted and padlocked inside a Unicol security box with a lockable door. A notice on the outside tells the would be thief that it is only a player and cannot record. Likewise they are also informed that the monitors cannot receive off air signals and are useless for home use or resale.
- 11.5 Keys for access are normally held in the local departmental office.
- 11.6 Most large classrooms have 35mm projectors as standard and we intend to increase this number next year. All rooms have OHPs as standard. Permanent screens are the norm in most rooms but we need to increase this cache. We are standardising on solid swivel / tilting OHP screens which have a working life in excess of fifteen years.
- 11.7 What determines if a room should have permanent equipment? There are two main factors which affect this e.g., usage and location.
- 11.8 Heavy usage is a fairly obvious criteria but any room which is in an awkward place makes it difficult to install any AV kit. Therefore we have tackled these rooms first. This has saved a considerable amount of technician time and eases the problems for lecturing staff of having equipment delivered late. Equipment lasts longer as a result and re lamping is reduced. One should not overlook the dangers associated with installing heavy AV kit into rooms with poor access. Heavy monitors should not, under any circumstances be carried up or down staircases. These conditions are a prime candidate for permanent equipment. It is also wise to consider the implications of the Health and Safety at Work act, and of course all staff are aware of the penalties for infringement.
- 11.9 Where sites are large, strategic stores are vital and saves considerable time and effort, but getting departments to relinquish space, however small is not such an easy matter.



## 12 OHPs.

- 12.1 Surprisingly OHPs seem to give us most trouble as people 'borrow' them from classrooms for personal use in offices. We have tried to stop the practice to no avail. We have chained them to desks or to a trolley, but then they take the whole unit or cut the chain off! Short of bolting the whole rig to the floor, which is impractical, this will continue to be a problem. We have tried appealing to their better nature, this has taken the form of a note attached to each machine advising academic staff that the practice of borrowing these items inconveniences their colleges but it falls on deaf ears.
- 12.2 When budgets allow we will purchase loan machines for departments which would be located in the departmental office. It may prevent the loss of teaching equipment.

## 13 Communication with AV Staff.

- 13.1 This was a major problem for the unit for some considerable time. Staff could effectively hide and the service was inefficient. It had to be solved and technology was the key, but could we afford it on limited budgets. It was first addressed by using pagers and did improve matters, but often the building provided the ideal Faraday cage and messages were often lost. Various pagers were tried with varying degrees of success, non of them being ideal. Eventually mobile phones were considered the only answer but these are open to abuse and a strict work only regime has to be established. Orange phones are the standard adopted by the college and these have proved economical and reliable. Strict spending limits are in place and any calls over the allotted time are scrutinised and staff have to account for additional time incurred. Personal calls, incoming and outgoing are forbidden, not just due to cost but more importantly vital emergency AV calls can be delayed or even missed.
- 13.2 In practice, AV staff have found that mobiles save time, especially on a large campus. The call and rental charges are manageable and rarely rises above the talk 15 rate. Total cost for a month, for three phones is £53.00. The phones in use ( Motorola mr1) are now three years old and still perform well. Each phone has two batteries and only one has been replaced so far. One building still presents problems but Orange are working on microcell technology transmitters that improves cover within buildings.
- 13.3 They have proved invaluable for emergency support calls from academic staff and communication between AV staff when rigging† and calls for assistance on difficult assignments. Every lecture theatre is provided with a list of emergency phone numbers.

*†In these circumstances it obviates the need for separate hand held transceivers thus reducing costs for additional equipment and licences.*

## 14 Faculty Based AV Technicians .

- 14.1 Traditionally AV technicians work from a centre and migrate to various departments to carry out their tasks on an hourly or daily basis. This practice wastes time and does not build relationships within faculties. Every day departments may have a different technician and both have to get used to each others working methods. With sufficient numbers of AV staff it is proposed that each technician will be responsible for his own departments and or Faculties.
- 14.2 This will ensure that there is a familiar face that academic staff can readily identify. An in depth appreciation of that departments work will be built and an affinity will develop between both parties. The AV technician will always be the first point of contact between the department and MSU centre. In particular new staff would be informed of all of the services on offer by MSU thus reducing the amount of advertising needed overall. If special projects are being developed that involves MSU the technician will be sufficiently proficient with the work of the unit and will be in a position to recommend a particular specialist. A training period for all AV staff is considered essential so that they are conversant with all of the available services on offer. They will become an effective 'sales' team for the unit together with representing the unit within their sphere of operation at user groups.
- 14.3 It is envisaged that other AV staff would have to become familiar with each others departments to provide cover for periods of absence. Rotation of staff would take place at specific period to cover these eventualities.
- 14.4. In an exercise of this nature where staff are seconded from the centre to departments it is essential that the AV staff do not forget that they are employed by the centre rather than the department that they service.
- 14.5. This is particularly important when staff need to collectively work on a joint project for the centre. If they are not effectively managed excuses may be found by the incumbent why they cannot help due to other commitments for the department or faculty for whom they are seconded at the time. If this happens then the whole scheme collapses.
- 14.6 The line manager must be aware of all the major commitments for his/her technicians at any given time. This is where room bookings via networked terminals will become invaluable as a management tool enabling staff to be used effectively and to maximise their time. Each technician will have a computer terminal at their remote site where they will have a local timetable that is specifically for their location. It will become increasingly important to control staff activities in the future to keep overheads to an absolute minimum.
- 14.7 It is also essential to have routine staff meetings for all personnel who are seconded to Departments and or Faculties so that their MSU identity is not lost. This increases the management workload but it is essential to maintain morale and commitment to the job.
- 14.8 This has to be achieved without the loss of job satisfaction and the individual must be able to identify with the responsibility that has been delegated to him/her. A certain amount of autonomy is vital to the overall success of the operation. It should not be forgotten that the majority of AV tasks can often be routine and retention of high calibre staff must not be overlooked, therefore one must ensure that some independence is built into any scheme that is developed. This may seem to be an impossible task but if people are trusted to work within broad guide lines rather than rigid frameworks greater flexibility can result. Good line managers are essential, they must be involved in day to day work and be able to help out as necessary during busy periods.

## 15 Staffing.

- 15.1 With the continuing round of cuts year on year it has been impossible to increase our compliment of permanent staff.
- 15.2 However we have had some success and for some time have been employing temporary AV staff on short term contracts. Not ideal, but funding has been found for two additional technicians for busy periods starting in January 1997.
- 15.3 Since we have been using temps the service has improved immeasurably. The improvement in service has demonstrated to college the need for permanent staff. Moreover theory has been practised and I can report that seconding a technician to a faculty has improved service immeasurably. Academic colleagues report that they are very happy with the new arrangements.
- 15.4 I can report that MSU has had a review and recommended three additional AV staff. The review group were presented with the data shown in appendix five along with a persuasive argument to support the case.
- 15.5 The case was made on the grounds of work against staff availability and complexity of the task. Regular service and maintenance is a major concern and it was being neglected along with other essential work. It also took a number of complaints to support the statistical evidence and served to highlight the problems faced by academic colleagues.
- 15.6 Data has been compiled for a number of years and covers a period from 1990 to date. (See appendix five)
- 15.7 From the graph it can be seen how the trends have stretched our meagre (three technicians) resources each year.
- 15.8 To compile this data was not an easy task and a formula had to be established that allowed us to obtain a broad view of the demands. Of course with so few AV staff I did not want to waste their time by asking them to fill out time sheets. In any case they can be overlooked by staff and consequently would be forged at a later date which was something I wanted to avoid. When compiling this sort of data it has to be obtained with minimum effort.
- 15.9 The solution seemed to lay within the booking forms but of course with so many variations in requests for service how can these make any sense.
- 15.10 After much thought and several false starts a plan was devised that allowed all existing data to be recorded as a job regardless of the length of time the task took to complete. Not ideal I know but it does give a trend.
- 15.11 This was achieved after analysing all jobs that had been undertaken for the previous two years. It was considered appropriate to treat each booking as one job regardless of time. For example installing an 35mm projector would be logged as one job. A video shoot which may take four days would be booked as four jobs, one per day. If two technicians were involved an allocation of one job each per day would be recorded.
- 15.12 As can be seen this has produced a trend which is as accurate as we need without wasting staff time. The data is compiled on a data base by our administrator each month and again with minimum effort. Because the data is so rudimentary errors in transfer to the data base are largely eliminated.
- 15.13 The next stage will be to compile equipment usage by item and we are currently undertaking this work. It is still at the planning stage and more work needs to be done before implementation.
- 15.14 It will help to assess what equipment is being used and how often, where shortfalls are occurring in our equipment stock and what needs replacement. It will be able to identify service

intervals on specific items and signal this to technical staff. Hopefully it will ease their burden and remove the need for them to keep a separate log. This will be developed alongside the bar coded price list for our production services and the networked room bookings outlined above. The emphasis is on reducing manual operations to an absolute minimum.

## 16 Room bookings.

- 16.1 Room bookings at QMW are unnecessarily complex and needs to be streamlined. At the moment this function is carried out by an administrative department and is purely historical.
- 16.2 Bookings are via internal mail which is very slow. There are two forms for staff to fill in , one for the room and another for AV equipment, although it works, it is very inefficient.
- 16.3 I have proposed that room bookings are handled by Media Services as this will negate the need for two forms. The present room bookings team should be relocated within the AV centre. This will promote understanding of AV work and they will become familiar with the limitations of the rooms.
- 16.4 I would advocate a short AV training period for room bookings staff so that they appreciate the problems faced by technical staff.
- 16.5 For example some rooms do not have blinds or the acoustics are poor and so on but only AV staff know of these problems. AV staff also know the availability of equipment stocks for any given period or can suggest alternatives immediately.
- 16.6 To further streamline the operation and reduce staff costs, I have also proposed that a central college data base be established that can be accessed by all staff. They could book rooms and AV equipment by e-mail, availability of rooms and equipment could be seen at a glance. Notes can be added to rooms with particular difficulties as outlined above, some rooms can even be locked out of the system if unsuitable for AV presentations. These rooms can still be booked but not with AV kit.
- 16.7 Emergency bookings can have a special alarm page that would alert the AV staff. These calls could be restricted automatically and the limit determined by the number of regular bookings already on the system and availability of staff numbers to respond to the request.
- 16.8 Self access bookings will prevent academic staff making unrealistic demands as they can see when staff will be available to support them. All of this still needs to be clarified and suitable software installed to cope with our specific requirements but it is possible and it will happen, but it needs considerable development work.

## 17 Skill Level of AV Staff.

- 17.1 What criteria do you set when appointing AV staff? What qualification is required when you write the job specification? What attributes are you going to ask for in the job advert? Since the demise of the City and Guilds and B.Tech courses for AV personnel it seems that a formal training programme has been abandoned.
- 17.2 Where then do the new breed of technicians get their training. The answer is that they don't get any form of academic or practical training at all. You may ask then how they learn their trade. A very good question?
- 17.3 It seems that even some old hands just pick it up as they 'go along', some may have had an electronics background if you are very lucky or perhaps have been a sound engineer. Generally its a very mixed bag and there is no sign that this will change. So then, what does one ask for in a potential candidate? The best you can hope for is to outline a broad range of skills that you require and try not to put off very good unqualified technicians by being too specific about their educational background. We have been very fortunate that we have first class technicians who have experience in many fields and can undertake all that is asked of them from basic AV to video conferencing and installations of major AV projects. On the other hand we have had some that could give chapter and verse on setting up a video data projector but in practice had difficulty with basic kit. These people are no longer with us.
- 17.4 One way of finding a good technician is to find out if they can produce a good solder joint at interview. You would be surprised how many fail and it has proved a good yardstick with which to judge technical competence. It is not the only criteria of course but is a solid indicator.
- 17.5 But this is not the point we need qualified staff that have a theoretical/practical background in electromechanical devices together with electronics, optics, video production/editing and a solid understanding of new technologies to name but a few.

## 18 An Audio Visual Training School.

- 18.1 If the above is a true reflection of the AV skill levels available to the university sector then we should be alarmed and very worried about the future of AV support. Considering how many universities and colleges of further education there are in the UK it does not take a genius to work out the vast numbers of AV technicians that are required to support this essential service.
- 18.2 To address this problem and undertake a structured programme of training is an enormous enterprise. It is essential to enter the 21st century confident that support services are able to cope with the ever increasing technological demands.
- 18.3 There seems to be two ways of tackling the problem the easiest route would be for a training organisation to take on the task, such as the City and Guilds of London Institute or that the University sector undertakes the task. In my view the former would be more appropriate and has many accredited courses available in similar trades and professions in FE.
- 18.4 If this were adopted we would be ensured that there was a qualified body of technicians with the appropriate skills and a recognised qualification (GNVQ) to take us forward. There will be those that will argue that technology will largely render these skill levels redundant which is as far from the truth as you can get. True there will be a change of direction but technology will demand different skills and we should not be content with the status quo, we must raise awareness, train our staff to new levels of competence that runs parallel with the requirements of the institutions.
- 18.5 A structured course with an appropriate syllabus and resulting professional qualification is essential for the next century.
- 18.6 The University sector must be the largest single user of AV for what is effectively a single employer.
- 18.7 We are in a very strong position to ensure that a formal course of training is reintroduced. We need technicians who can develop new techniques and use their creative abilities, not just set up off the peg equipment. Convincing the C&G or anyone else to resurrect the AV course is quite another matter which will need considerable effort to bring it to fruition.



## 19 Trainee Technicians.

- 19.1 In the last fifteen years the trainee technician has all but disappeared in all sectors of the University and it is time to redress the balance. We should have a core staff of trained professionals with a reasonable spread of age and experience. We need staff who are progressing through the ranks and learning the 'trade'.
- 19.2 It is important not just for the young of this country to have employment opportunities but we need to stimulate older staff to train their younger counterparts. Older professionals can and often lose their edge when they have been in the same profession for a number of years and especially so in Universities. Having a trainee on the team keeps everyone alert to their "tricks" and alert to new techniques and technologies than may otherwise be the case, just in case the youngster asks any awkward questions?
- 19.3 Young people in an organisation are an essential balance that is currently missing. We should endeavour to top up from the bottom and occasionally staff will remain in post for many years. Those that move on will hopefully return to the Universities in later life with a broader understanding and knowledge than would otherwise be possible.

## 20 Representation within an Institution.

- 20.1 Representation at the highest level is essential to the successful development of any group in the university sector, units like ours are no exception. Finding the correct representative is quite another matter.
- 20.2 Since Media Services was established in December 1989 there have been several changes to the reporting structure.
- 20.3 We have had one Pro Principal, two Vice Principals and a User Group, a Media Services committee and finally Head of the Estates Department . These were never the correct reporting structures and most of the incumbents had other duties and MSU was seen as yet another task. Recently though we have undergone a review and it was my considered view that we should report to the head of Academic Information Services. An academic committee which is chaired by a Vice Principal to support the work of the group seems to be the appropriate mechanism to produce the desired result.
- 20.4 The review committee has now concluded its work and recommended that we should report as described above. This formally happened on 1st January 1998.
- 20.5 The group now comprises Library, Computer Services and Media Services. (see appendix eight)
- 20.6 We are already actively working with the computer services network manager to determine which theatres need data points in addition to those already installed and a specification is being established for future use. Other projects are likely soon so it already seems to be a good collaborative partnership.

## 21 Advertising the Internal Service.

- 21.1 We have so few AV and photographic staff that it would overload the service if we had an aggressive internal marketing campaign. To date we have relied on word of mouth to promote the service but it is unfair on academic staff who do not know of our existence. It holds back teaching and cannot be allowed to continue. In the past, we have produced a newsletter (see appendix nine) and intend in time to update it when additional staff are appointed.
- 21.2 When this is achieved then we will be able to mount a marketing campaign to promote the service..
- 21.3 This will take the form of an e-mail to all members of staff, backed up with hard copy A4 advertising .
- 21.4 In addition, we plan to have a stall set up at the induction course which every new member of academic staff must attend, and of course the mandatory web page, which is already nearing completion.

## 22 Presentation and Communication Skills Course.

- 22.1 These courses were introduced seven years ago on the basis that students and post graduates are largely unprepared when they present their work to others. Within the institution even basic rules are broken, with too much information on a slide or poor photocopies being displayed on an overhead projector etc. etc.
- 22.2 Media Services took the initiative and introduced these short courses which are a two day event. The students are given tutorials and group practical sessions which are augmented with course notes (see appendix six). When they have completed the course they make a presentation to the rest of the group. This is video taped and analysed with the student group and course tutor. They are always provided with a video of their presentation for reference. This has proved very popular and we have four departments already signed up and two others have expressed an interest.
- 22.3 The course leader is qualified to teach as well as being a qualified professional photographer.
- 22.4 At the moment the course is restricted mainly to postgraduates and I have presented a paper to the research degrees committee for additional funding with a view to extending the course to all students (see appendix six).
- 22.5 New opportunities now exist since we have merged with AIS. It may be possible to run courses in conjunction with computer services. As an example, they run a course on Power Point which deals exclusively with software familiarisation, our presentation course could run on afterwards to provide the creative techniques that are essential for its effective use.

## 23 Database for Redundant Equipment.

- 23.1 The next century should be identifiable as the Millennium that stopped some of the waste in Universities. We can't stop all waste in colleges of course but we can and should attempt to recycle as much of our own redundant AV and photographic equipment to other institutions or local schools free of charge. We should not throw it away, as often happens, or store it just in case it will come in handy, inevitably it will never be used again and takes up valuable space, so pass it on to those that can utilise it!
- 23.2 It is essential that the equipment listed is free or minimal cost to encourage rapid interchange, after all we will all benefit at some point from the service. Contact names could be passed on to local schools by interested parties.
- 23.3 It would need safeguards to prevent misappropriation of the institutions capital stock holding and this could be the same procedure as currently exists for 'writing off' redundant items. A recipient would of course be required to sign a receipt .
- 23.4 There are many times when equipment is no longer up to the task we demand of it on a regular daily basis but would be sufficient for low volume conditions. There are those that will raise all sorts of objections. The main one being safety of electrical products and liability. This could be overcome by the recipient signing to say that they understood they had to have the equipment P.A.T.s tested before use. The liability of the supplying institution would then be protected?. Of course a legal view should be sought but I am sure with minimal effort this is achievable.
- 24.4 A database could be set up on a WEB page. Perhaps it could be a self access page where the donating department could log in to a remote site and enter the data. This would only require the page to be set up initially and from then on it would be self supporting! Contact names and phone numbers being entered/deleted by the supplier along with the equipment on offer. An ID or password would be needed by participants otherwise it could be tampered with and become worthless.

# Photographs



**P2 - Prototype lecture theatre**



**P3 New lecture theatre based on prototype**



## P3 New lecture theatre based on prototype







**P4 Lecture theatre based on prototype (small)**

## P4 Lecture theatre based on prototype (small)



## P5 Self access lectern



## Appendix 1

### Initial Response to Queens Building Refurbishment

The following are my first thoughts and at the moment are only presented here as a broad canvas that will need considerable detailed work as we progress.

Within this document I have not constrained my thoughts to the existing structure but also endeavoured to look at an ideal solution that would provide for immediate needs and more importantly would cater for a developing campus. Again my thoughts are only broad based but hopefully serves as a brainstorming exercise without becoming blinkered to the possibilities.

#### A Modified Queens Building

- 1) If Stern Hall is part of the equation, it would appear at first sight to have the potential to have two large lecture theatres, (Great Hall -Stern Hall) raked back to back with a central projection facility located above the central vestibule. This would ensure minimal staffing levels to operate such a facility and reduce some duplication of equipment. It could if of sufficient size serve as a base for servicing other smaller rooms within the envisaged complex.
- 2) Media Services should be housed in this redevelopment.
- 3) All of the facilities should have lecturer controllable AV facilities as far as is practicable to reduce staffing levels to a minimum.
- 4) All new rooms should be equipped with internal telephones to call up AV support technicians when things go wrong.
- 5) All new rooms should have ethernet sockets for computer aided teaching, multimedia presentations and desktop video conferencing. This is particularly important in small seminar rooms but in an ideal world, most, if not all rooms, should be provided with what should be deemed standard services.
- 6) From day one the facility, in whatever final form it takes, must be future proofed in terms of fibre optic cabling and termination and have the ability to incorporate new teaching technologies as they are developed. In order to achieve the best advice regarding computer applications may I take this opportunity to suggest that Jeremy Brandon from computer services is also invited to join the feasibility group.

Cont'd.....

- 7) All the largest lecture theatres being envisaged within the scope of this plan should be fitted out with individual microphones for each student. This will enable greater interaction between student and lecturer.
- 8) As an extension of the above we should also incorporate an interactive TV network. This would allow the lecturer and students to be seen more clearly by all whilst lecturing / demonstrating or asking a question. More importantly each student would be provided with an interactive data tablet and mouse pen with which to interact with any image that was being displayed by the lecturer from the video / data projector. Each student position could also be equipped with a keyboard with which they can also input data and output this to the video / data projector. By necessity these terminals would only become live under the control of the lecturer. This would allow more intimacy between all participants than was ever possible in the past and enable academic staff to develop innovative teaching methods.

With such a large facility seating 800, new technology must be used from the outset in order to make it a usable venue. New technology can make an audience seem smaller than it really is; if necessary enabling one to one teaching. With this technology the variations are endless.

Interaction around the world via satellite is even possible, opportunities that this would open up for teaching are infinite e.g. tentative discussions with ENCOMM, the local cable TV Network has identified an interest by them to use our resources for distance learning.

This is not science fiction, MSU has already undertaken live transmissions to Europe and with the new '*Super Janet*' links it seems all things are possible, e.g. linking our lectures to other institutions. However, this is similar technology to LIVENET which college withdrew from recently due to cost. Some resistance to this may be in evidence if proposed. Newer technological solutions such as ISDN lines with CODEC video compression techniques could be established on a dial up basis and therefore cheaper to operate than was ever possible with LIVENET.

Following the merger with the medical institutions, greater demands will be made on us to provide better facilities. Interaction with other medical colleges or hospitals via TV links will become a vital teaching and communication tool. These systems, however basic in the first instance, can be developed and engineered to our our specific needs as we progress. The emphasis must be on future proofing.

To date MSU has installed links to various lecture theatres that have been used for conferences and more recently for teaching in BMS.

- 8) We should not forget the commercial implications for such a system. Prestigious events could be relayed anywhere in the world for large organisations. The revenue earning potential should not be overlooked.

- 9) To further 'automate' and reduce staffing to a minimum, a central video "payout" distribution network should also be included:-
- a) to reduce equipment requirements to a minimum.
  - b) to prevent theft of video recorders.
  - c) the network would also allow live satellite off air programmes to be relayed to any room.
  - d) if small self study rooms were to be incorporated into the design this would enable students to view taped off air material without the risk of equipment being abused or stolen.
  - e) with this system of video distribution, small and large lecture theatres could all be linked via TV thus enabling the whole building / campus to be used for one event, or subdivided for several lectures/conferences.

### **Central Teaching Block**

So far I have only considered the Queens Building as it stands. If we look beyond this and say demolish the entire structure and rebuild the exercise becomes more attractive (see attached diagram).

It would be more attractive on many counts:-

- a) purpose built, and designed from the ground up for teaching, compromise and poor support services would be a thing of the past.
- b) a core AV service facility in the block would be possible, again saving time, money and certainly convenient for lecturing staff.
- c) I envisage a hexagonal building with the teaching walls on the external walls of the structure. Other geometrical configurations may provide more efficient use of space. It would have a central service column and projection rooms that can be accessed by the technical staff without the need for them having to struggle through crowds of students with equipment (see diagram)
- d) All central services could also come up through the central services column and would aid installation ; reduce future installation cost for data cables, heating, power etc.
- e) A building as described would keep the technical function completely separate from the student population and would restrict entrance and exits to the outer limits of the building. In fact, corridors on the circumference could encompass the building enabling gyratory movement of students, I have no idea what restrictions fire regulations would impose on such a scheme.
- f) Media services should be housed in this facility; it would be central to the college site and convenient for users of our services.
- g) An Hexagonal glass fronted building would also prove visually stimulating compared to the other bland buildings on this site, especially if it was on the site of the Great Hall.
- h) If the building was stretched into an ellipse, small and large rooms could be created on the same floor while other floors could be large lecture theatres occupying the entire elliptical shape.

I hope you find these first thoughts helpful. Much of the above should form the core of teaching requirements whatever venue / building type is finally given approval. Certainly heavy emphasis on multimedia and TV presentation applications should be one of the most vital ingredients.

## Appendix 2

### **AV system overview Stern Hall**

The design proposal for all AV equipment follows a benchmark (geog. 125) that has a proven track record at QMW. It forms the basis of the proposed systems for new lecture theatres, and encompasses comments from users to make the system as user friendly as possible.

Moreover the system is future proofed and allows upgrading as technology progresses.

The system as envisaged also incorporates an element for self access operation by academic staff which reduces, although not entirely, the need for a technician to be on duty at every event. There are constraints which are governed by security and complexity of some lectures which will require professional technical support.

All three theatres have identical operating systems although the smaller venues can have lower specification equipment due in the main to the size of rooms.

They can be interlinked to enable transfer of video sound and data and increases the overall capacity available when needed to circa 300 seats.

Each room will have a teaching wall with counter balanced column boards Black / white. Each will have separate OHP screens plus projection screens for Video, Slide Data and Multimedia presentations.

The main lecture theatre has two CRT video data projectors that provides for video, slides and data to be projected simultaneously. The smaller theatres have smaller LCD units, the latter to be decided due to the rapid developments in technology. All theatres have the capability of dual projection as standard.

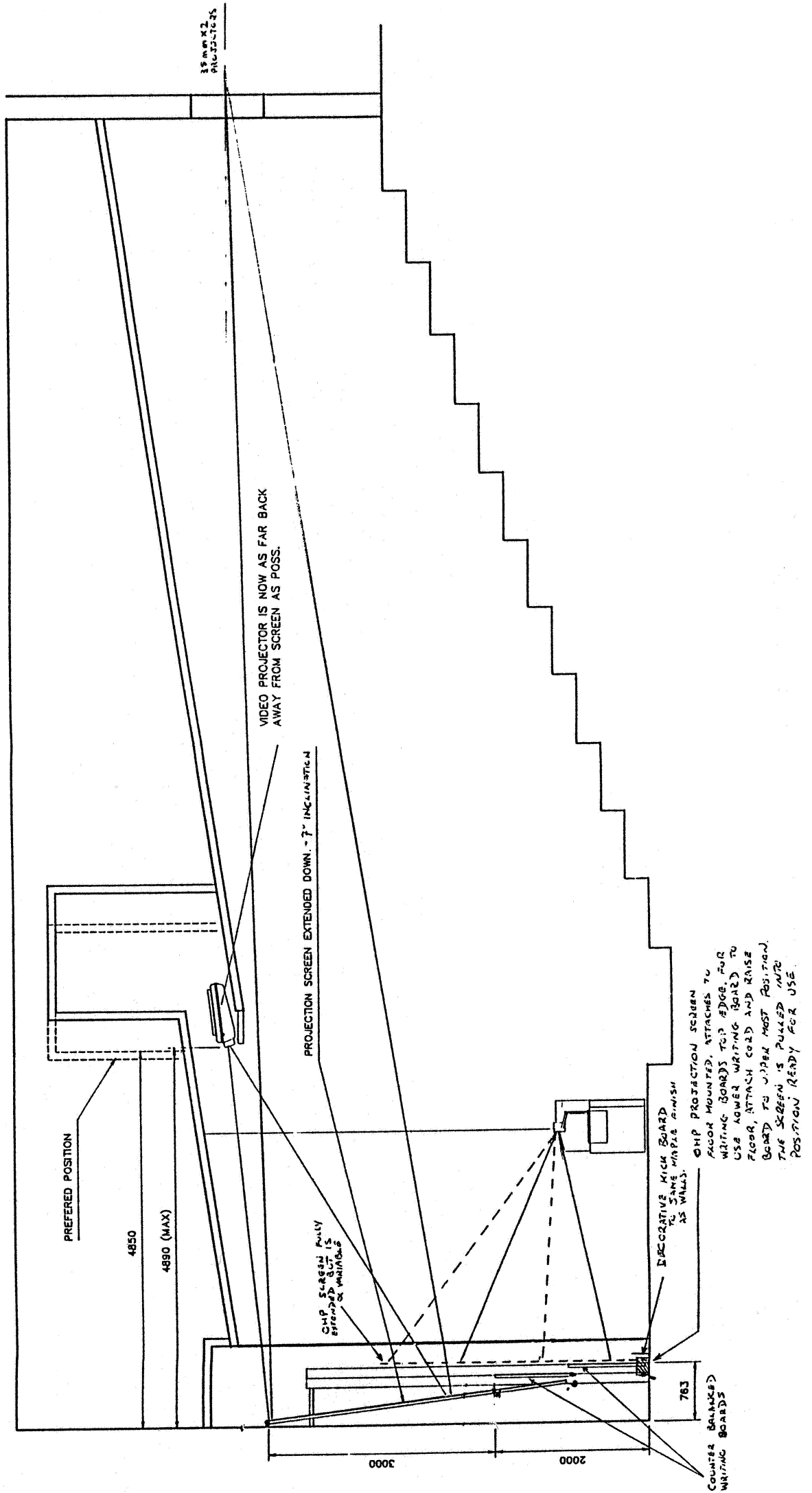
The projection booth will house 35 mm projectors VCRs radio microphone receivers, audio and PA systems, technicians control desk, sound mixer together with interfaces for patching systems to the small theatres. It will also houses a control rack for the AV equipment.

The systems in each room will be controlled from the lectures position at the lectern. This comprises a computer controlled AMX system that is menu driven on a touch screen panel and guides the user by simple instruction to the desired AV hardware. It will also have a VCR for tape replay and confidence monitor to display what is on screen behind the lecturer.

The system effectively hides the technology and presents an easy to use system.

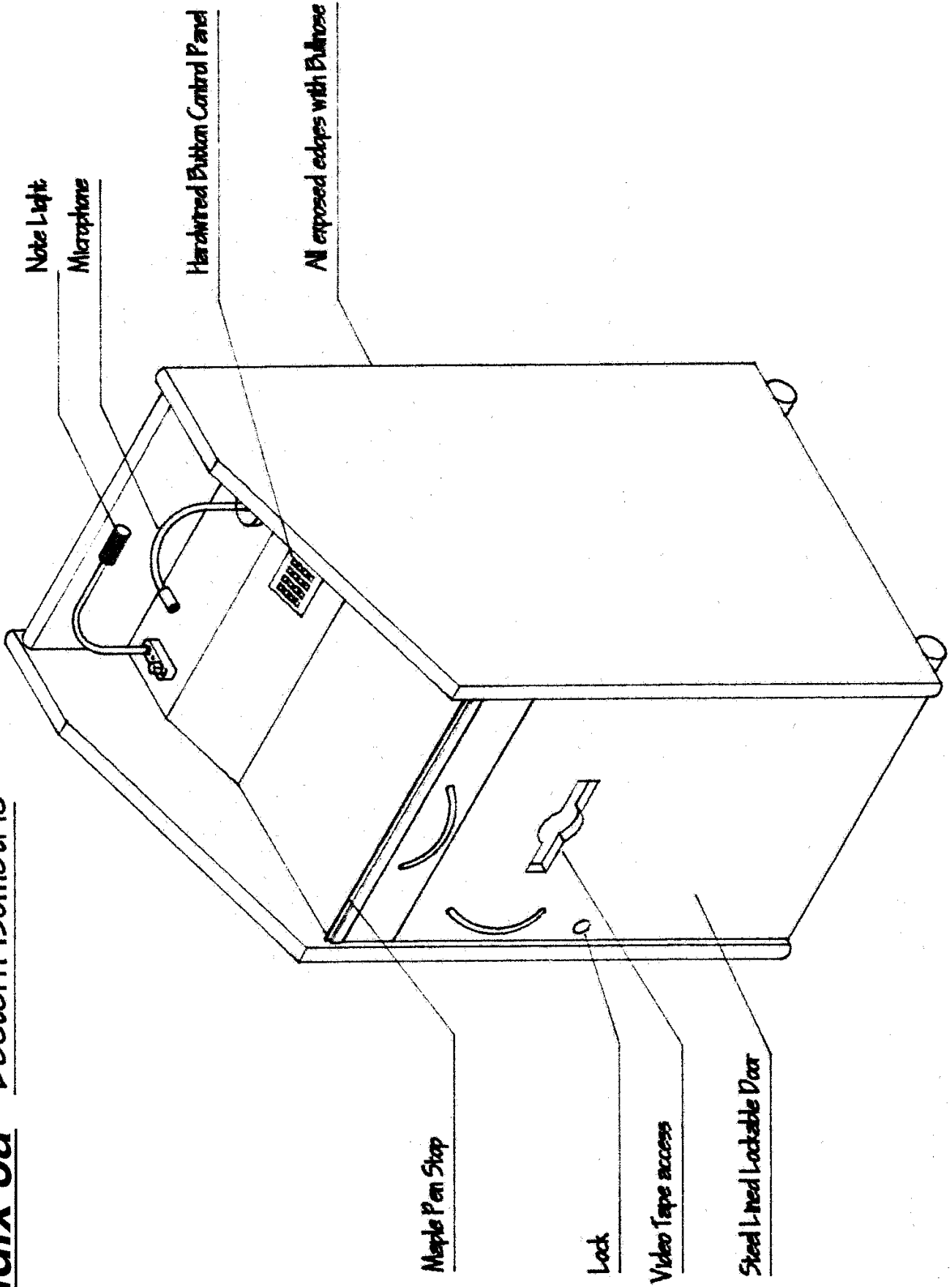
SCALE & DIMENSIONS TO BE USED AS GUIDANCE ONLY

# Appendix 3





# Appendix 3a Lectern Isometric



## Media Services Specification Sheet for Planning

### New Lecture Theatres or Refurbishments

- 1) MSU determines equipment levels for teaching space below.
  - a) Main lecture theatre of up to 120-350
  - b) Lecture room of up to 30 - 99 ( eg Geography 125)
  - c) Seminar / small lecture room 30-40 or less
- 2) Specification sheet details equipment at two levels .
  - a) Basic specification that describes all AV equipment in global terms only. See sheet AV11
  - b) Detailed specification; see sheet AV11 that identifies all equipment in precise detail, price and the services that each item of AV equipment requires.
- 3) A detailed schematic plan (and elevation if ceiling mounted equipment is being installed) sheet AV12 of the area must be included. An approved copy to be supplied to the planning office.
- 4) All cable runs should be specified and shown on the schematic plan.
- 5) Remotely controlled power outlets should be shown on the plan.
- 6) All remote control / cables carrying data should be shown on the plan.
- 7) Data terminations (Ethernet) as specified by computer services must be in a position that suits MSU's purposes and shown on the plan if required.
- 8) All writing and projection surfaces to be shown on plan and specified by MSU.
- 9) All cable sizes to be determined and specified on sheet AV9; use as many separate sheets as needed.
- 10) The above will have to be detailed and included on the working drawings.

# Media Services Specification Sheet for Planning

AV numbers on left indicates equipment position on plans

<input checked="" type="checkbox"/> Tick	Equipment requirements	comments	Budget prices
<input type="checkbox"/>	AV01 Standard Lecturn_____		
<input type="checkbox"/>	AV02 Lectern Reading lamp_____		
<input type="checkbox"/>	AV03 Overhead projector 250 Watt_____	Fixed <input type="checkbox"/> Pool <input type="checkbox"/>	
<input type="checkbox"/>	AV04 Overhead Projector 400 Watt_____	Fixed <input type="checkbox"/> Pool <input type="checkbox"/>	
<input type="checkbox"/>	AV05 Wall mounting (slide projector)_____		
<input type="checkbox"/>	AV06 35mm projector_____	Fixed <input type="checkbox"/> Pool <input type="checkbox"/>	
<input type="checkbox"/>	AV07 Control equipment_____		
<input type="checkbox"/>	AV08 Multiprojection control equipment_____		
<input type="checkbox"/>	AV09 Video Camera_____		
<input type="checkbox"/>	AV10 Overhead camera (Visualiser)_____		
<input type="checkbox"/>	AV11 VCR / Player State type SVHS Umatic etc._____		
<input type="checkbox"/>	AV12 Vision Mixer_____		
<input type="checkbox"/>	AV13 Video Projector_____		
<input type="checkbox"/>	AV14 Video/Data Projector LCD_____		
<input type="checkbox"/>	AV15 Video / Data Projector CRT_____		
<input type="checkbox"/>	AV16 Video / Projector Hoist_____		
<input type="checkbox"/>	AV17 Security Cabinet_____		
<input type="checkbox"/>	AV18 Monitor (Wall mounting)_____		
<input type="checkbox"/>	AV19 Monitor (Ceiling Mounting)_____		
<input type="checkbox"/>	AV20 Projection Screen fixed_____		
<input type="checkbox"/>	AV21 Projection Screen Tilting_____		
<input type="checkbox"/>	AV22 Projection Screen Pelmet type_____		
<input type="checkbox"/>	AV23 Projection Screen (OHP) Swivel mount_____		
<input type="checkbox"/>	AV24 Writing surfaces Colour type_____	BLK <input type="checkbox"/> WH <input type="checkbox"/>	
<input type="checkbox"/>	AV25 Writing Surfaces Fixed_____		
<input type="checkbox"/>	AV26 Writing Surfaces Counterbalanced_____		
<input type="checkbox"/>	AV27 Board illumination_____	Yes <input type="checkbox"/> No <input type="checkbox"/>	
<input type="checkbox"/>	AV28 Switches Dimmer Controls_____		
<input type="checkbox"/>	AV29 Amplifier and Control Racks_____		
<input type="checkbox"/>	AV30 Audio System_____	Yes <input type="checkbox"/> No <input type="checkbox"/>	
<input type="checkbox"/>	AV31 Radio Microphone_____		
<input type="checkbox"/>	AV32 Microphone_____		
<input type="checkbox"/>	AV33 Speaker Enclosures (Wall Mounted)_____		
<input type="checkbox"/>	AV34 Speaker Enclosures(Ceiling Mounted)_____		
<input type="checkbox"/>	AV35 Data Socket (state type)_____		
<input type="checkbox"/>	AV36 240 Volt /AV/ Data outlets Combined (Wall mounted)_____		
<input type="checkbox"/>	AV37 240 Volt /AV/ Data outlets Combined (Floor box)_____		
<input type="checkbox"/>	AV38 240 Volt outlets (wall sockets)_____		
<input type="checkbox"/>	AV39 240 Volt outlets (floor box)_____		
<input type="checkbox"/>	AV40 AV control Socket (Floor Box)_____		
<input type="checkbox"/>	AV41 Data Socket (Wall)_____		
<input type="checkbox"/>	AV42 Data Socket (Floor Box)_____		
<input type="checkbox"/>	AV43 Dimmer Racks_____		
<input type="checkbox"/>	AV44 Lighting Tungsten 240 Volt (Dimmed)_____		
<input type="checkbox"/>	AV45 Lighting Tungsten Low Voltage (Dimmed)_____		
<input type="checkbox"/>	AV46 Lighting Fluorescent (Dimmed)_____		
<input type="checkbox"/>	AV47 Lighting Fluorescent (Fixed output)_____		
<input type="checkbox"/>	AV48 Telephone Bar 0 / 9 _____		
<input type="checkbox"/>	AV49 _____		
<input type="checkbox"/>	AV50 _____		

# Media Services Specification Sheet for Planning

Equipment requirements	comments	Budget prices
AV51		
AV52		
AV53		
AV54		
AV55		
AV56		
AV57		
AV58		
AV59		
AV60		
AV61		
AV62		
AV63		
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AV90		
AV91		
AV92		
AV93		
AV94		
AV95		
AV96		
AV97		
AV98		
AV99		
AV100		

# Media Services Specification Sheet for Planning

**Detailed technical specification of all AV equipment including cost of item**

Include costs for engineering work needed from an external supplier.  
Include any costs from other sources per item.

AV Equipment

**Cost in £**

# Media Services Specification Sheet for Planning

## Security requirements for AV equipment

## Contacts

Liaison officer Media Services

Telephone No

Location

Liaison Officer Planning

Telephone No

Location

Sign requirements

Communication requirements:-

Data Requirements:-

## Comments

# Media Services Specification Sheet for Planning

## Security requirements for AV equipment

## Contacts

Liaison officer Media Services

Telephone No

Location

Liaison Officer Planning

Telephone No

Location

Sign requirements

Communication requirements:-

Data Requirements:-

## Comments

# Media Services Specification Sheet for Planning

**Preferred AV consultants / contractors**

Address

Tel No

Fax No

**Preferred Board / Screen contractors**

Address

Tel No

Fax No

**Comments**



# Media Services Specification Sheet for Planning

**Additional Requirements**

<b>Cable requirements</b>	From Device <b>AV</b> __	To	<b>Specify</b>	<b>Key to Cable type</b> Draw here
Type				
Voltage				
Current				
No of cores				
No of Strands				
Special Features				
Nominal Dia				
<b>Cable Termination</b>				
Male          Female				
Mounting				
Supplier Reference				

<b>Cable requirements</b>	From Device <b>AV</b> __	To	<b>Specify</b>	<b>Key to Cable type</b> Draw here
Type				
Voltage				
Current				
No of Cores				
No of Strands				
Special Features				
Nominal Dia				
<b>Cable Termination</b>				
Male          Female				
Mounting				
Supplier Ref				
Number of power supplies, see plan				

# Media Services Specification Sheet for Planning

## Lecture theatre Definition

Main lecture theatre; Capacity 120-350. Over 350 TV enhancement

Notes:-

Lecture room; from 30-99:-

Notes.

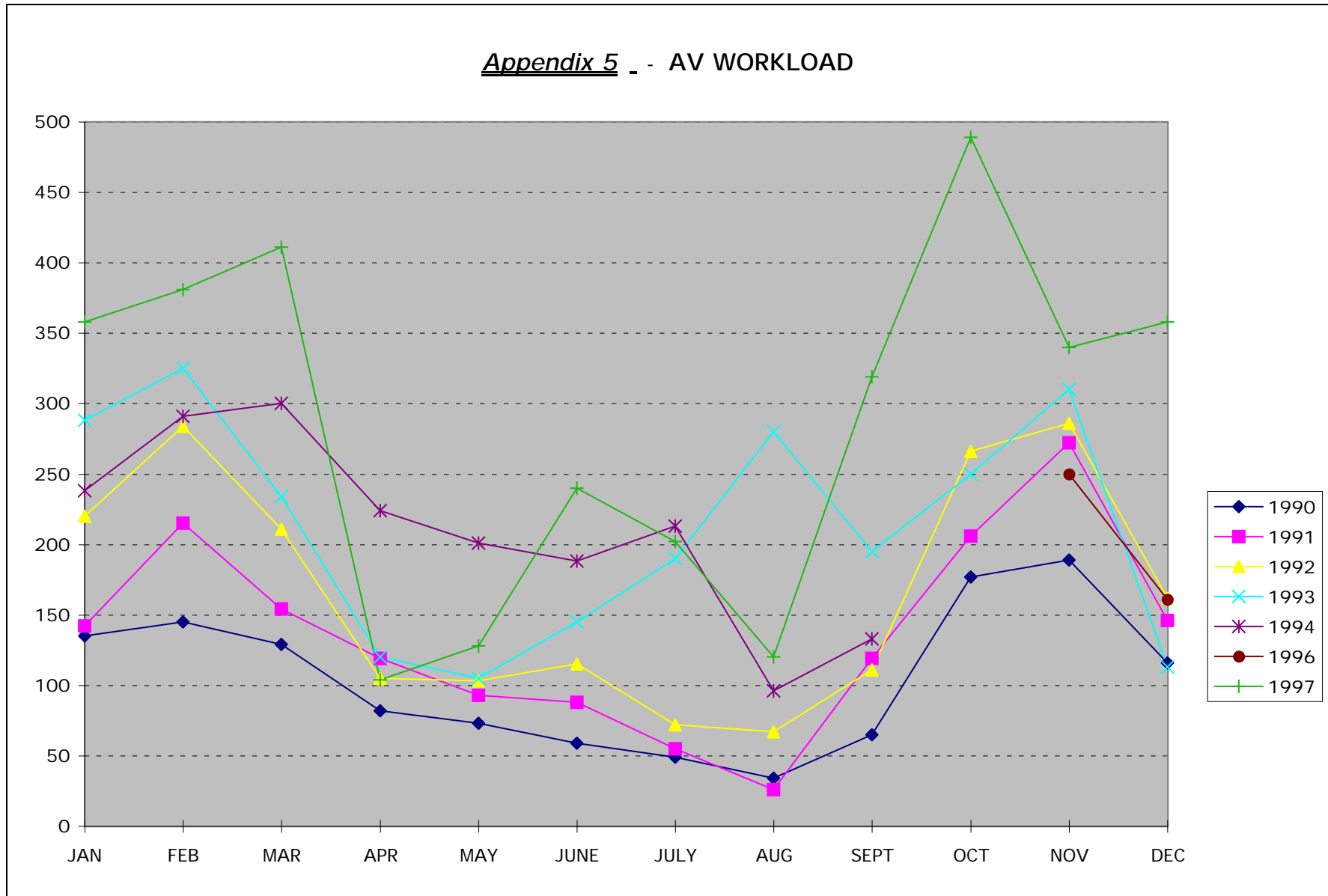
Seminar / small lecture room; Capacity 30-40 or less.

Notes.

# Media Services Specification Sheet for Planning

AV numbers must be used from sheet AV5/6 to annotate any diagram that is drawn here.

Appendix 5 - AV WORKLOAD



## **Appendix 6**

### **MEDIA SERVICES**

#### **Presentation and communication skills course.**

*Authors:- T. J. Storey, D. Bacon, R. Brown,  
Manager, MSU. Course Leader. Course Assistant.*

***This paper outlines the presentation and communication skills course and the resources required to run it as an integrated part of the educational process.***

#### **WHY DO WE NEED THIS COURSE?**

The course was initiated by MSU seven years ago to highlight an obvious need, and to prove that the demand exists. This is proven and we now need to access the necessary funding to develop this service.

It can be reported that during this time, several departments have sought to enrol some of their under and post graduate students onto these courses, (see appendix one for list of departments). Where students take part the response is always favourable and questionnaires support this view.

QMW is noted as a centre of excellence. As an institution we do not offer presentation skill training as part of the formal teaching programme and is clearly detrimental to a student's future prospects.

At some stage during their time at QMW undergraduates will be called upon to present their work. Without special tuition, style and delivery will be variable to say the least. Post grads are called upon to deliver their work at seminars and conferences world wide; they need support more than most as they are effectively ambassadors of QMW.

The skills training we offer is essential not only here, but when they enter the commercial sector. It may mean the difference between securing a post, or later, funding for a research project. They will be expected to demonstrate at an interview, as a prospective employee, the ability to communicate effectively at all levels. These skills are essential tools in commerce and, we must prepare our students for the outside world.

We, as a college, will fail in our duty as educators if this skill training is not part of all degree courses. The accreditation procedures now give greater emphasis to presentation and the use of visual and multimedia based teaching methodologies.

The courses are undertaken by an existing member of MSU's staff who is qualified to teach this subject and has lectured part time for other institutions. To develop the service further, our learning resources officer now assists; he has eighteen years experience in developing teaching materials and presentation techniques. This has enabled the course leader to expand the content, but with limited resources and other pressing commitments we are having to analyse if this activity can continue.

#### **CURRENT POSITION:**

Since September we have delivered three courses for undergraduates and one for post graduates. From the enquiries received to date, it is clear that even on a voluntary basis the uptake would be significant if we were in a position to expand the programme.

Cont'd.....

### **THE COURSE:**

When we started the courses, it comprised of just one session where the tutor gave a board brush introduction to the subject and then students were asked to present on a favourite topic which was videoed and a critique followed. This has now developed into two sessions and a more in depth approach together with course notes and tutorials for students who may have problems with preparation.

Unfortunately, even this does not go far enough and ideally longer appraisal sessions are required together with in depth training in the use of various presentation platforms.

### **CURRENT DEVELOPMENTS:**

MSU is in the process of producing a multimedia self access CD that will augment the course. It will show all aspects of the course with full motion video and sound clips and multipath access that one would expect from a high quality educational product. These will be available to students that enrol for the course and can be accessed in computer services Mac Lab. Consideration is already being given to marketing this material once completed together with course notes.

The interactive programme will include topics already covered as revision material. In addition advanced presentation techniques will be dealt with that encourage students to use innovative techniques, once they are familiar with conventional technologies.

### **THE FUTURE:**

MSU provides this service from its existing limited resources. Clearly if the courses are to be maintained funding levels need to be identified that will enable development to continue in a meaningful way.

These courses should be available to all departments not just the lucky few.

The following provides college with four option packages.

The college will have to determine how many students will need to attend these courses (numbers will affect budget requirements). If we offer the course at all, it should be available to all that register with the college.

### **COURSE DEVELOPMENT - UNDERGRADUATES**

All undergraduate students that register should be required to enrol for these courses before they finish the degree course. This could be scheduled for any time within the three year period of their degree course and ideally would take place in the second or third years.

In the longer term, the presentation course should become an integral part of the degree, perhaps half a course unit may be appropriate.

## **COURSE DEVELOPMENT - POSTGRADUATES**

All postgraduate students that register should undertake further training at an advanced level and the course would be developed specifically for this group. This may include separate elements on slide design and practical advice on both hardware and software difficulties that may be experienced. As well as the use of multimedia platforms and how these can be integrated with other conventional presentation methods. In addition, course content could be extended to include interview techniques and CV compilation etc.

Ideally refresher courses would be run throughout their three year PhD period to hone the skills developed over a five year period which commenced with the undergraduate basic course.

In broad terms the course can start with basic funding and be developed in line with the first students to pass through the system to PhD level. Funding must be available year on year.

## **COURSE DEVELOPMENT - ACADEMIC STAFF:**

Furthermore, one can see the possibility of extending this to in house training for Academic staff, this will keep them abreast of the latest techniques. Sessions to help staff to develop their skills for TV/Radio interviews etc., could be an on demand service.

To note that MSU has already moved in this direction and purchased a training video (May 96) from the BBC "Appearing on Camera". This is available now to departments on a loan basis. Its a first step with limited budgets but it demonstrates our commitment to moving this forward. Departments are to be circulated shortly.

## **COMMERCIAL IMPLICATIONS:**

If we were to set up a special training section within MSU then the commercial potential for revenue generation should not be overlooked. Significant charges can be made for specialised courses and being close to Docklands and the City would open up a significant commercial market. The spin offs could also prove valuable as along side these activities we could sell other MSU services which would help to support internal services MSU provides.

In addition, CCRS may benefit directly if commercial companies use our training services.

## **OPTIONS**

### **Option I**

That MSU ceases the courses at the end of this academic year.

**Advantages:** No cost option.

**Disadvantages:** Students leave the college without any form of presentation skill. QMW's reputation suffers.

**Resource requirements:** None

## Option II

(This option is a lower specification than courses currently being delivered.)

That MSU provides a limited number of courses depending on MSU's other commitments. Clearly this would not provide a service to more than two departments in any one academic year.

Requirements; minimal additional funding to cover costs of photocopying and stationery. £100.

**Advantages:** Minimal cost

**Disadvantages:** Low key with minimal value. Follow up courses not available. Students would not have time to assimilate or practice what they have been taught. Will put unreasonable stress on staff and reduce their effectiveness. Service provision in other areas of MSU will be degraded as a result of a dual role, the course will also suffer.

**Resource requirements:** Limited to above.

## Option III

This option assumes that all 2,350 students in their second / third year would be expected to attend the course. This could also include circa 15% of the postgrad population in the first and second years of operation. After this, how the remainder were phased into the scheme would need careful consideration. Additional resource will be essential.

**Advantages:** Students will have good basic presentation skills and would perform well at interview for jobs in the commercial or academic sector.

QMW's reputation would be enhanced especially during accreditation periods.

Present students would recommend QMW to potential students.

**Disadvantages:** Cost .

**Resource requirements:** 1)Two full time posts (replacement ††,cost at technician grade.)

this

2)Dedicated training room, it may be possible to incorporate into the feasibility study for MSU's new studio complex.

3)Dedicated AV equipment permanently installed.

4)Dedicated budget.

**Cost implications:** costs

One Grade D Technician **£16,509** inclusive of all hidden added to basic salary @ 21.7%

costs

One Grade E Technician **£19,785** inclusive of all hidden to basic salary @ 21.7%

hrs

Administrative and secretarial support one day per week 8 per day £12612 pa.inc LW +(21.7% hidden costs) @

£7.50

Per hr. Pro rata 42 Wks pa **£2,880**

**NB these are total costs to college not the salary to the employee. All salaries calculated at lowest point on scale.**



Additional equipment to augment existing pool.

One portable video projector.  
 One lap top computer plus additional cards for image applications.  
 Consumable budget **£1100 pa**  
 Equipment budget **£18K** first year only and if required thereafter by  
 bid application via MSU in the normal way.

N.B. Until a permanent home is found for the training section centrally tabled rooms will suffice and MSU's pool equipment installed when required.

### Option IV

As above this option assumes that all 2,350 undergraduate students attend, but in addition all 1,666 postgraduates will also be put through the system.

**Advantages:** As above but in addition the colleges image would be significantly improved at conferences at home and abroad. The use of IT solutions in presentations would become the norm.  
 Short commercial courses could be provided.  
 External funding supports internal service and pays circa 20% of salary costs in first year. Second years external earnings would support 35-40% of salary costs.  
 Third years external earnings would support up to 70% of salary costs.  
 Fourth years external earnings would support up to 100% of salary costs.  
 Fifth year would see significant returns and may need additional staff depending on commercial activity. In any case further developments should be fully self financing from the start.  
 Sixth and subsequent years would see more commercial work undertaken with substantial returns on investment.

**Disadvantages:** Highest cost option

**Resource requirements:**

- 1) Two full time posts plus one\*\* part time for 2 days per week.
- 2) Dedicated training room, it may be possible to incorporate this into the feasibility study for MSU new studio complex.
- 3) Dedicated AV equipment permanently installed.
- 4) Dedicated budget.

as members \*\* Only a part time member of staff would be required for Postgrad teaching some preparation / teaching could be undertaken by the permanent of staff. Therefore a third full time post is not required.

**Cost implications:** One Grade D Technician **£16,509** inclusive of all hidden costs added to basic salary @ 21.7%  
 One Grade E Technician **£19,785** inclusive of all hidden costs added to basic salary @ 21.7%

One Grade 1 Academically related 2 days per week (8 Hrs per day) for 42 weeks £19557.78 pa. Pro rata =£11.64 per Hr or **£7822**  
 New post administrative and secretarial support 5 hrs per day two days per week secretarial grade 2 £12612 inc LW +(21.7% hidden costs) @ £7.50p  
 Per hr. Pro rata 42 Wks pa = **£3150**.  
 NB these are total costs to college not salary to the employee.  
 Consumable budget £1500 pa  
 Equipment budget £18K first year only and if required thereafter by bid application via MSU in the normal way.

#### ALL SALARY COSTS CALCULATED TO FIRST POINT ON SCALE

Additional equipment to augment existing pool.  
 One portable video projector.  
 One lap top computer plus additional cards for image applications.  
 Circa £18K.  
**Staffing ††**

Proposed, if funding is approved that existing staff currently providing the service continue in this role. That we recruit one new photographer grade D to replace the course leader who is currently Grade E. In addition we recruit a Multimedia Technician grade E, to replace learning resources officer currently grade F. (he will still oversee Multimedia production and the AV sections work).

This is a saving in real terms as presently both of the above staff are grade E & F. This does not take into account that probably within a year both will apply for regrading to an academically related scale. Effectively it is a cheaper option than recruiting externally at lecturer grade to attract the right calibre of staff.

Existing staff have proved their commitment to this project and have the expertise and educational background to continue with, and develop what they have worked hard to establish.

#### Conclusion

Proposed: that all departments are initially top sliced for this service for salaries and other costs. That a deadline be imposed when this service section of MSU would become totally self financing.(see option iv page 5)

Option four provides a solid foundation on which to build a presentation course at minimal cost compared to the envisaged returns in the long term.

Option three and four are cost effective when set against a background of accreditation and the growing emphasis on the utilisation of AV technologies in teaching undergraduates.

Significant financial benefits from external sales of these courses and all MSU's products will be a real possibility, given the correct level of investment. This has been proved with our work to date.

It will encourage academic staff to use new technology as students demand higher standards.

It will enable college to raise its profile and as a consequence enable higher calibre students to be recruited.

It is also compatible with the colleges **strategic planning and policy statement** that innovative teaching methodologies should be taken on board.

Cont'd.....

-7-

### **Appendix one**

The following departments have taken advantage of these course and to date students have reported favourably on course content.

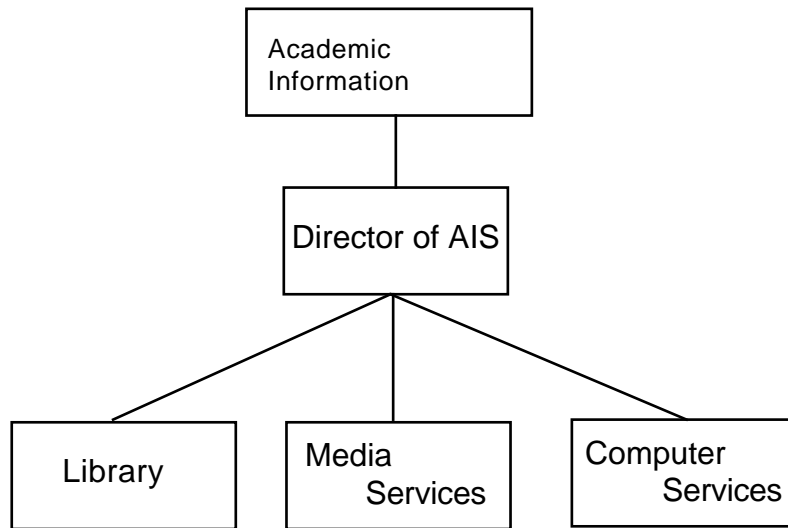
Survey sheets are available if required as supporting evidence .

#### **Departments regularly using the service during the last six years.**

Materials Science  
IRC  
Mechanical Engineering  
Politics (includes students from various departments)



Academic Information Services



## Appendix 9b

### Audio Visual Services.

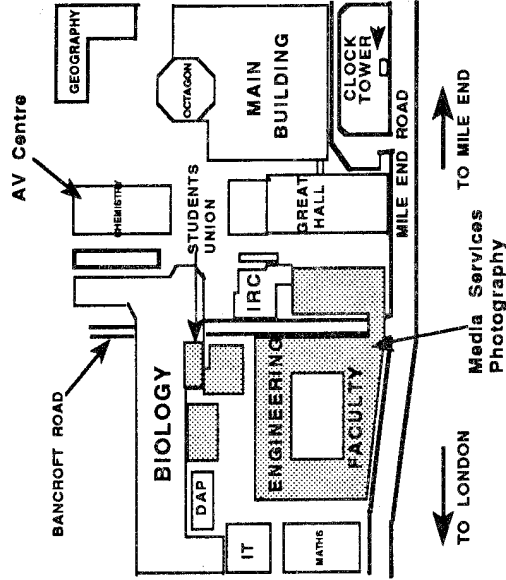
- Projection equipment including video/data installation & servicing. Your own departmental equipment can be services free; the only cost would be for consumables - ask for details.
- Technical support.
- Presentation training for undergraduates.
- Video editing, VHS.
- Video duplication, VHS (see latest copyright regulations).
- Off air recordings TV & Radio (see latest circulated information available from MSU or Library).
- Video production; upgraded to highband SP umatic and includes full edit suite.
- Conferences can be televised and distributed to lecture theatres across the campus.
- Multiple projection techniques.
- Language laboratory technical support.

**N.B. ALL AV SERVICES ARE FREE UNLESS CONSUMABLES HAVE TO BE SUPPLIED e.g. VIDEO TAPE. TECHNICIANS TIME IS ALSO FREE DURING NORMAL COLLEGE HOURS 9.00 - 5.30, OUTSIDE THESE TIMES OVERTIME WORKED BY AV STAFF WILL BE PAID FOR BY THE DEPARTMENT REQUESTING THE WORK, AT THE NORMAL COLLEGE RATE.**

In order to provide a cost effective and balanced service to all departments, five days notice is required for all AV services. This also applies to photography, but special arrangements can be made in an emergency.

**PLEASE NOTE THAT ALL AREAS ARE CURRENTLY UNDER SEVERE PRESSURE**

### LOCATION OF MEDIA SERVICES



### TO OBTAIN SERVICES PLEASE CONTACT THE FOLLOWING.

#### Photography

Mr R Crundwell Ext 3352  
Mr D Bacon Ext 3352

#### AVS (between Biology & Chemistry)

Mr I Gates Ext 3190  
Mr M Selwood Metcalf Ext 3190  
Mr A Andreou Ext 3190

(In an emergency Mr Gates can be contacted via his radiopager Tel No: 081 812 1358).

Manager Mr T Storey Ext 3046  
Secretary/Admin. Mrs C King Ext 3046

All services marked '●' call AVS

All services marked '■' call Photography

Is your department publishing or presenting its research, activities to other professional bodies - the answer has to be YES.

Then why not let MSU photographers record the work you so painstakingly undertake perhaps over a period of years. When you consider the costs involved in your research, photography of the final results is a very small proportion of the overall costs.

This is particularly true when you consider that all you pay for is the cost of materials, technician time is free.

This list is not exhaustive, but is intended as a guide. Our services can be tailored to your needs and offers a level of flexibility that is unequalled in price or delivery. Our scientific applications specialists can, and have been, very helpful in all spheres of research from Schlieren applications, high speed photography, time lapse and specialised camera design.

Teaching support material can be rapidly and professionally supplied from 35mm colour and blue line slides + computer graphics to overhead projection transparencies and large poster displays.